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MINUTES

of some

EXPERIMENTS

to ascertain

The permanent security of Vaccination,

AGAINST

EXPOSURE TO THE SMALL-POX.

To which are prefixed

Some Remarks on Mr. Goldson's Pamphlet.

WITH AN

APPENDIX

CONTAINING

Testimonials and other Communications from many of the most respectable Medical Men, in this neighbourhood.

By Richard Dunning,

Surgeon, and Secretary to the Dock Jennerian Institution.

“ Neque opinione sed naturâ constitutum est jus.”

CICERO.

“ Mark what yon Father's uplift eyes bespeak !

“ What livelier transports on yon Mother's cheek

“ Attest her joy !”

DOCK :

Printed and sold by E. Hoxland, sold also by the other Booksellers in Dock, Stonehouse, and Plymouth ; Messrs TREWMANS, Exeter ; Messrs. G. and J. ROBINSON, Paternoster-Row, and J. MURRAY, Fleet-street, London ; and MOTLEY, Portsmouth.

1804.

Any profits that may arise from the sale of this publication to be given to the Benevolent Institution, in this town, for relief of the sick poor.

ERRATA.

- Page 19,—Note—Line 7, for Principles read Pimples.
29,—Line 24, for undertake read underrate.
36,—Line 19, for Vaccine read Vaccina.
42,—last Line, for Phalanxes read Phalanges.
52,—Line 6, dele. when.
72,—Line 9, for rush read rash.
Postscript,—Page 80,—Line 5, for was read were.

T O

Sir JOHN ST. AUBYN, Baronet,
JONATHAN ELFORD, Esquire,
President,

To Doctors REMMETT, WOOL-
COMBE, MAY,

And the other Members of the
Dock Jennerian Society,

Gentlemen,

VERY suddenly and imperiously
called on by the anxious feelings of
a parent, by the duties of a man, and
by the obligations imposed on me
by my profession,---I venture to ob-
trude once more on public attention,

and respectfully present some facts and observations which I hope will not be, at this moment, wholly un-
useful.

This little ephemeral pamphlet then, which I have the honor to address to you, will not, cannot, be an object of merciless critique. It has entirely arisen out of the momentary jet of circumstances, is really a work of uncontrollable necessity, and has been absolutely hurried to the press. Had I however felt any apprehensions on that score, honored and encouraged as I am at this time, by your approbation and support, these would have been removed. I beg leave to assure you, and *you* will credit the assertion, that there is no wish, under the existing circumstances, nearer my heart than to be able to convey to the public

mind, *that satisfaction* and *that peace* which I have derived from the result of those decisive Experiments, the Minutes of which occupy the following pages; I say from the result, because very fond parents, only, can say what has been my solicitude often, during the prosecution of them. I have been greatly, and indeed earnestly, assisted by my medical friends and others, on this very interesting occasion; they are too numerous to be all mentioned here, and it would be unjust to select,---the respective contributions of my good friends will best express the quantum of obligations to each.---I avail myself of this opportunity to return them my best thanks, and to assure them that time cannot erase from my mind the recollection of their liberal attentions.

If we succeed in any considerable degree in our endeavours to invalidate the opinions which have been advanced with so much confidence, in a pamphlet just published, by Mr. Goldson, (who I understand is a very respectable surgeon at Portsmouth,) and consequently in the same degree to allay the present irritation and distraction of the public mind with respect to Vaccine Inoculation, you will, I know, fully participate in those cordial gratifications which so happy an event must assure to us.

I have the honor to be,

Gentlemen,

with every respect,

Your most obedient and humble servant,

Richard Dunning.

Dock,
JULY 12, 1804.

S O M E

MINUTES, &c.

MR. Goldson, in his late pamphlet, has ventured to express in strong terms, his belief that Vaccination does not afford permanent protection, to the human body, against the Small-pox ; and has even adduced many cases and much evidence, to prove that the duration of the security derived from this process, does not exceed sometimes three years, sometimes not two, nor even one.

Mr. Goldson's pamphlet, I fear, is much too well written not to excite a very general interest, and, I lament to add, not

not to occasion a vast deal of misery and distraction in many thousands of families; at the same time I am most ready to admit, and I admit it with great satisfaction, that his Observations, &c. are written apparently with too much candor for me to doubt a moment his willingness fully to retract them, whenever he shall see occasion to do so.---Indeed the whole *Tenor* of the pamphlet carries conviction to my mind, that the author is not a bigot, who, if wrong, will not be convinced.

I can imagine no reason to induce me to believe that Mr. Goldson's motives with respect to the question before us, are not as good and as professional, as the motives of any man.---Nor will Mr. Goldson disclaim my pretensions, nor indeed the pretensions of my medical friends here, who have so cordially supported me, to the same credit.

Apparently we differ widely, yet the only difference, I presume, is, that we pursue different means, and travel different routs, to obtain the same ends, and

reach the same goal.—I should indeed congratulate myself to meet this gentleman on the road, and, if it were possible, to journey on together.---But to proceed,

All the analogies, I believe, in physiology and nature, with which we are acquainted, that bear at all on the question, militate directly against Mr. Goldson's opinions.---Yet it must be acknowledged that many of those nice laws by which the Cow pock (and the Small-pock too) is influenced, are, and it is probable, ever will remain undetected. And again many are but too imperfectly understood to enable us to decide conclusively, or even confidently, in many cases which will now and then occur in practice.

We must now, therefore, make our appeals to facts only, to broad facts that cannot be mistaken; and it is an imperious duty on us to make these appeals as soon as possible.—We must not now rely on the specious and ingenious theories of any man, however high and respectable his rank and authority in the profession may be.

As soon as I had read Mr. Goldson's pamphlet, which was very lately, I availed myself of the earliest opportunity to set on foot these tests of Variolation, and exposure to the fullest infection of the Small-pox that could be devised, which will be detailed in the course of this little work, and which I offer to the public as my contribution towards arriving at a decision of a momentous question in which we are all engaged.

These Experiments were conducted under the immediate observation of several of the most respectable physicians and surgeons in this neighbourhood---Doctors Remmett, Woolcombe, and May, Messrs. Little, Fuge, Smith, Lower, Penkivel, and Bone; Mr. Veitch, also, 2d surgeon of the Royal Hospital at Stonehouse did me the favor of visiting my children while under experiment; to Mr. Andrew Sargent I am particularly indebted,---he did me the kindness to attend during the whole time, with the exception of one day, when his avocations prevented him, and to minute with great accuracy all the circumstances as they arose; I have avail-

ed myself of his minutes---they agree in every material point with my own.

It is to the purpose also to mention, that these Experiments were made in the village of Stoke, about half a mile from Dock town, in a house situated within twenty feet of the room in which the family lives, from whose child, loaded with a full crop of Small-pox, I took the matter for the inoculation of my children.

The Small-pox had been in this house several weeks, and were then, and are at this time, prevailing in the adjoining ones; and several children in this small village had already fallen victims to it.

I may add here, that many of my little friends, whom I had vaccinated at different periods in the course of the last four years, had been constantly breathing for many weeks, in this village, a highly variolated atmosphere, with perfect impunity.

As connected with the present Experiments, I shall prefix to them another, not

unimportant, which was undertaken in the early part of the year 1802;---add a few desultory observations; and, with great pride, some testimonials and communications from my friends, that will afford a mass of evidence, not easily to be contravened, and give peace and comfort to every rational and unprejudiced person, into whose hands this pamphlet may fall.

Having vaccinated, with my own hands, considerably more than a thousand subjects, since the latter end of the year 1799, when I began the Jennerian practice, many of whom have been subjected to Variolation, and many constantly and fully exposed to casual infection of the Variolous Principle; and having never met with a single instance of subsequent Small-pox among these subjects, nor known a case in the practice of any surgeon in this town and neighbourhood; I should fail egregiously in my duty, were I not to take this and every opportunity to assert, and re-assert my entire belief, that the protection against the Small-pox which we obtain from the practice of Vaccination is not casual, nor of a limited

duration, but regular and permanent ; in short, that it is a law, and not a *lusus naturæ*.

No circumstance in the history of the Small-pox has more engaged the attention of medical men, and physiologists, than that long, yet temporary, insusceptibility of infection, which we frequently see so remarkably obtains;---I will give a striking instance or two of this,---I can adduce many others as remarkable, and so can any man of recollection or observation,---Elizabeth Everitt was a Small-pox Nurse, upwards of thirty years ; this woman supposed she had passed the Small-pox when a child, and was consequently fearless of them ; a few years since she caught the disease, and died.

I well remember to have heard the late Doctor Geach, Surgeon of the Royal Hospital at this port, with whom I served my apprenticeship, to relate a similar event, which happened to a Small-pox Nurse in that Hospital, immediately under his own observation.

There is no reason to believe that the same irritability in the skin, which we so often see excited by the local application of Variolous Matter in persons who have passed the Small-pox, does not exist in an equal degree in those, who are the subjects of this insusceptibility ;---indeed we know it does.——We many times see in the practice of Inoculation, a Variola, (or Small-pock,) apparently complete in most of its characters, produced on the arms of persons who many years afterwards have the Small-pox. and who in the interval and before it, had perhaps, been an hundred times within the sphere of the most active Variolous Contagion.

No one, therefore, who reasons at all, will disbelieve, that these two nurses in the course of their long attendance, and necessarily perpetual contact with the Small-pock matter, had not, several times, local Variolæ, from which, through the medium of Inoculation, it is possible and easy to convey to others the Small-pox even of the most malignant character.-----The same negative and local Variola, or Variolæ, insulated, as it were, with respect

to any assimilating power over the constitution, will again equally happen to mothers under this repulsive character of constitution, before and after they have had the Small-pox.—The same occurrences and the same insusceptibilities, therefore, must occasionally and necessarily be met with in the practice of Vaccination; and of course, in those extremely rare instances, where, unfortunately, it must happen from these premises that the Small-pox may follow; the Cow-pock, it must be expected, will be as apparently correct, as the Variola under the same circumstances; and probably it will be even larger than the regular Vaccina of susceptible habits; but then it will also be attended with the same negative characters, which mark the Variola produced under similar circumstances above described; and yet from this Vaccina the genuine Cow-pock will be as readily and as efficiently communicated as from that of susceptible constitutions.

The Vaccine Principle I have been using the last four years, is what I took from the arm of a girl, 10 years old, whom I en-

deavoured to subject to Vaccine Influence, in May, 1800 ;---this child, nine years before, had suffered much from the Small-pox, and indeed her face was much pitted with them.—To the affection produced on this child's arm, I called the attention of Doctor Remmett,* exactly at the time of its acme ; he saw it also in other stages of it ; and I did not fail to call the doctor's observation also, to the first subject which I vaccinated from this Cow-pock ; the Dr. will recollect that this child had the Cow-pock in its most perfect character, and that this child lived in Chapel-Street, in Stonehouse.

I long since observed, that the Cow-pock which follows on the arms of those who had passed the Small-pox, whom I vaccinated with a view to relieve other diseases, is sometimes even larger, (indeed I incline to say, and Mr. Little inclines to say, too,) *generally* larger, than that which usually forms in patients, not previously vaccinated or variolated.

* It is a justice due to Doctor Remmett to say, and truly it would be ungrateful were I not to say, that he has been always much alive to every novel circumstance which has arisen here, in the Jennerian practice.

But yet the character of them as a whole, is distinctly different; a little attention, and a little experience, are, however, necessary to enable us to mark them; the most distinguishing trait to be sought for in them, is perhaps, in the absence or character of the Areola; this, I believe, seldom amounts to little more than a narrow Belt; if more extended, it has none of the characters of active inflammation, is irregularly distributed, and is less hard.

Mr. Little, (who lives within a few doors of me, and with whom I usually confer,) and myself, have learnt, I believe, to distinguish them with tolerable readiness and precision, and I have no reason to doubt that my other friends here, cannot as readily detect them.

Whenever a *Pustule* occurs in Vaccination, and, I believe too, whenever a *rapidly-formed Pustule* occurs in the practice of Variolation, terminating in what is called a festering sore, however large this may be, and however copious the discharge from it; and although attended too, with

considerable derangement of the system, and determination of an anomalous character to the skin, in the form of pimples sometimes approaching even to maturation, yet after all these consequences, the entire nothingness of them, in respect to any protection in either practice against subsequent Small-pox, is at this time I should think, too generally obvious to render it necessary longer to be insisted on.

I must introduce here a long quotation from Doctor Jenner's publications, which, really, leave hardly any thing to be said, which relates to the Vaccine and Variolous Practice,—when I look into his “Observations,” I am astonished to find how little has since been added to them, by the numerous able writers who have since published on the subject:---In his “Further Observations,” page 44, this great man says,—

“As the effects of the Small-pox Inoculation on those who have had the Cow-pox will be watched with the most scrupulous eye, by those who prosecute this

inquiry ; it may be proper to bring to their recollection some facts relative to the Small-pox, which I must consider here as of consequence, but which, hitherto, seem not to have made a due impression.

“ It should be remembered that the constitution cannot, by previous infection, be rendered *totally unsusceptible of the Variolous Poison*, neither the casual nor the inoculated Small-pox, whether it produces the disease in a mild or in a violent way, can perfectly extinguish the insusceptibility.* The skin, we know, is ever

* For this reason it was, I inoculated the other day, my eldest son with the Small-pox :---had the absorbents been here stimulated to take up the Variolous Principle, and had carried it into the system, I should have expected some little constitutional affection, followed, probably, with some of those acuminated unmaturing principles, which Mr. Goldson has brought forward, and to which he endeavours to attach so much consequence—but no absorption seems to have taken place in either case of my dear children---at least, not enough to alarm the system.

From the quotation I am transcribing above, it will be seen, and I think it will be believed, too, that some-

ready to exhibit, though often in a very limited degree, the effects of the poison when inserted there ; and how frequently do we see among nurses, when much exposed to the contagion, eruptions, and these sometimes preceded by sensible illness ! yet should any thing like an eruption appear, or the smallest degree of indisposition, upon the insertion of the Variolous Matter on those who have gone through the Cow-pox, my assertions respecting the peculiarities of the disease might be unjustly discredited.

“ On the arm of a person who had gone through the Cow-pox many years before, I once produced a Vesication by the in-

times, even more regular Variolæ take place in secondary Inoculations ; but that general arrest of the whole system, (nor indeed any thing that is connected with the remotest danger,) by the Variolous Poison, dissolving, at once, the Crasis of the circulating fluids, and the whole compages of the system, assimilating the whole body into a variolated mass, and effecting the most loathsome and the most afflicting deformity of the human frame that can possibly be imagined,---never occurs. Indeed the secondary communications from the Small-pox claim no attention, nor does that which may follow in the same way after Vaccination.

sertion of Variolous Matter, and with a little of the fluid, inoculated a young woman who had a mild, but very efficacious Small-pox in consequence, although no constitutional effect was produced on the patient from whom the matter was taken. The following communication from Mr. Fewster affords a still clearer elucidation of this fact.—Mr. Fewster says, ‘on the 3d of April, 1799, I inoculated Master H-----, aged fourteen months, for the Small-pox. At the usual time he sickened, had a plentiful eruption on his face, and got well. His nursemaid, aged twenty-four, had many years before gone through the Small-pox, in the natural way, which was evident from her being much pitted with it. She had used the child to sleep on her left arm, with her cheek in contact with his face, and during his Inoculation he had mostly slept in that manner. About a week after the child got well, she (the nurse) desired me to look at her face, which she said was very painful. There was a plentiful eruption on the left cheek, *but not on any other part of the body*, which went on to maturation.

“ ‘ On enquiry I found that three days before the appearance of the eruption, she was taken with slight chilly fits, pain in her head and limbs, and some fever. On the appearance of the eruption these pains went off, and now (the second day of the eruption) she complains of a little sore throat. Whether the above symptoms are the effects of the Small-pox or a recent cold, I do not know. On the fifth day of the eruption I charged a lancet from two of the Pustules, and on the next day I inoculated two children, one two years, the other four months old, with the matter. At the same time I inoculated the mother and eldest sister with Variolous Matter taken from Master H-----. On the fifth day of their Inoculation *all* their arms were inflamed alike; and on the eighth day, the eldest of those inoculated from the nurse sickened, and the youngest on the eleventh. They had both a plentiful eruption, from which I inoculated several others, who had the disease very favorably. The mother and the other child sickened about the same time, and likewise had a plentiful eruption.

“ ‘ Soon after a man in the village sickened with the Small-pox and had a confluent kind. To be convinced that the children had had the disease effectually, I took them to his house and inoculated them in both arms with matter taken from him, but without effect.’ ”

We must transcribe also the following letter from Dr. Jenner’s “ Continuation of Facts and Observations.”

“ ‘ DEAR SIR,

“ ‘ Society at large must I think feel much indebted to you for your Inquiries and Observations on the Variolæ Vaccinæ, &c. &c. As I conceive what I am now about to communicate to be of some importance, I imagine it cannot be uninteresting to you, especially as it will serve to corroborate your assertion of the susceptibility of the human system of the Varriolous Contagion, although it has previously been made sensible of its action. In November 1793, I was desired to inoculate a person with the Small-pox. I took the matter from a child under the disease in the natural way, who had a large burthen of distinct pustules. The mother of the child being desirous of seeing my method of communicating the disease by inoculation, after having opened a pustule, I introduced the point of my

lancet in the usual way on the back part of my own hand, and thought no more of it until I felt a sensation in the part, which reminded me of the transaction.---- This happened upon the third day; on the fourth there were all the appearances common to inoculation, at which I was not at all surprised, nor did I feel myself uneasy upon perceiving the inflammation continue to increase to the sixth and seventh day, accompanied with a very small quantity of fluid; repeated experiments having taught me it might happen so with persons who had undergone the disease, and yet would escape any constitutional affection: but I was not so fortunate; for on the eighth day I was seized with all the symptoms of the eruptive fever, but in a much more violent degree than when I was before inoculated, which was about eighteen years previous to this, when I had a considerable number of pustules. I must confess I was now greatly alarmed, although I had been much engaged in the Small-pox, having at different times inoculated not less than two thousand persons. I was convinced my present indisposition proceeded from the insertion of the Variolous Matter, and therefore anxiously looked for an eruption. On the tenth day I felt a very unpleasant sensation of stiffness, and heat on each side of my face, near my ear, and the fever began to decline. The affection in my face soon terminated in three or four pustules attended with inflammation, but which did not mature, and I was presently well.

“ I remain,

“ Dear Sir, &c.

“ ‘ THOMAS MILES.’ ”

Are not the preceding cases fully as discreditable to Inoculation as those brought forward by Mr. Goldson are to Vaccination? or, to speak with more propriety, do they not abundantly teach us that the Vaccine and Variolous Principle are very nearly, if not altogether, directed by the same laws? were the accounts struck even here, without looking to the vast advantages on the creditor side of Vaccination which are exclusively all its own, would the balance be much in favor of Mr. Goldson and the Small-pox? why then, let me ask, are so many circumstances, which in all the severity of application equally attach to Inoculation and Vaccination, insisted on with so much industry, and held up seemingly, *in terrorem*, exclusively against the latter? If we continue thus to appreciate it, I fear indeed, we are ungrateful and unworthy of the gift.

The subtle agencies which constitute those peculiarities of habit, or Idiosyncrasies, as they are called, which were just now alluded to, are some instances

of those nice laws which will in all probability for ever elude human research.

Were we at this time, with our scanty materials of knowledge in this respect, to enquire with the most abstracted investigation what that something is, which gives to the human constitution such a remarkable yet temporary insusceptibility, or what that is, that effects a revolution in the system and removes it, this would be to engage in a pursuit which must be marked with the *ne plus* of temerity, or folly and speculation.

But on the other hand, were we in a general co-operation to exert ourselves, with a little more good temper, and with a little more liberality, to reconcile in the best way we are able these failures, unavoidable by any human precaution, to the public mind and the less experienced Vaccinist; most assuredly, at least I believe so, the enemies of Vaccination would soon cease to persecute the practice, and throw them as stumbling-blocks in the way of the ignorant and credulous.

In short, if they are blots, they are blots which equally occur in both practices; and really in my estimation at this moment, (and I would not be extravagant,) are of no more weight when set in opposition to the general merits of Vaccination than the MACULÆ in the sun to its *meridian splendor*.

Mr. Goldson, in order to account for the irregularity in point of time, of recurrence of the Small-pox subsequent to Vaccination, says,—“I feel myself forcibly led to entertain an opinion that the inoculated Cow-pox may prove only a temporary prevention, and that in some *determinate time* after Vaccination, *varying perhaps according to the difference of constitution*; a person who was at first secured may again become susceptible of Small-pox.”

I believe Mr. Goldson means that every vaccinated patient (by vaccinated patient I mean a person whom the *Aura Vaccina* has duly pervaded, for there hardly seems to be any thing material in it) will

be perpetually liable to take on at some one period or other of his life, however extended, the Small pox ;---that this may happen the first, second, or third, or even eightieth year, or in any intermediate year or month, agreeably to that situation in the scale of *varying constitution*, where chance, for really we can hardly dignify it with a better name, may have thrown him.

This supposition of Mr. Goldson cannot be replied to in a common way of argument.—Unquestionably and unfortunately it is the most tormenting conclusion that he could have drawn from any premises ; had Mr. Goldson allowed himself to reconsider it, and had seen how infinitely mischievous the tendency of it would be, I assert that he would not have published it, at least so soon.—Let us explain and counteract it as well as we can ;—

Let us imagine then a scale of those various shades, and divide it into twenty equal parts, or gradations—then taking

almost the longest period of human existence, viz. eighty years, let us divide these also into twenty equal parts, corresponding with the same number of gradations ;—by this scheme it is very plain that each division of the scale will exactly represent a portion of four years in every man's life-----now if vaccinated patients, as Mr. Goldson's cases go to establish, are nearly as susceptible of Small-pox, in the first as in the subsequent divisions of the scale, how can it possibly be explained by dint of even the most ingenious theory, of the most ingenious man, that ever was resorted to, that the constitution of a single individual of the many thousands who have been vaccinated in these towns, within my knowledge, should not have fallen within the first gradation in the supposed scale, or in other words, that not one of those vaccinated subjects should have had the Small-pox ?

To illustrate this a little more we will much undertake the number of subjects who have been vaccinated here----say 5,000----but it may be said, though the cases adduced by Mr. Goldson do not

seem to support such an idea, that the susceptibility to Small-pox may increase in a ratio proportioned to the distance of time from the process of Vaccination ;— if however we recollect, that the periods of childhood and youth are always more susceptible of infectious diseases than the periods of manhood and old age, it is highly probable that a ratio the very converse of this really takes place :— however in order to average the susceptibility along the scale and to meet the opinion of those who think this greater in the earlier periods of life, we will deduct from the whole number taken a 6th part, or 833, and as there will be always a great many persons who pass through life without taking the Small-pox at all, we will be very liberal also on this head, and deduct another 6th part, or 833, which will be 1666, which will reduce the number we took to 3334,—divide these by twenty and we have exactly 126 persons who should, according to Mr. Goldson's expectations, if I understand at all what he means by those varying shades of constitution, who should have had the Small-pox in passing through the first di-

vision of the scale ; but the real fact is, I do most solemnly declare, that we have not, to this day seen a single unequivocal case of Small-pox subsequent to Vaccination.

It is very obvious that this little calculation, for I do not presume to call it a little demonstration, will be called a creature of the imagination---granted-- let me in my turn ask if those varying shades and differences of constitution, referred to so uniformly by Mr. Goldson, do not favour a good deal of imagination also ?

It is impossible for us at this time not to believe that the Vaccine Principle is important in the constitution, and œconomies of nature.----Mr. Goldson himself allows that it is too replete with beneficial consequences to mankind to be relinquished, and yet he has assigned to it vague and indeterminate agencies, that scarcely leave to it more than that, it is a principle in nature afloat, as it were, at random and forgotten. But we know that nothing is forgotten in nature ; all her laws are re-

gular and eternal.----Beauty and fitness mark them all.

Mr. Goldson says, page 22, " I will appeal to the candor of the profession whether the cases with eruptions, pimples, or whatever other denomination they may be classed, arising from Inoculation in persons who have passed the Small-pox, were ever known to bear any kind of proportion to what have occurred in Variolous Inoculation after Cow-pox?"

I reply with little hesitation—much in the same proportion I believe.--But let me appeal to Mr. Goldson's candor also and ask if the numbers inoculated with the Small-pox after the inoculated or casual Small-pox have borne any proportion to those that have been inoculated with Small-pox after Vaccination?—Let me also ask, who at present, or for many years past, has inoculated after the casual, or even the inoculated Small-pox, unless the latter had been equivocal? who believes in recurrences of the Small-pox, at least of assimilating Small-pox, in the same

person? to what purposes then have such Inoculations been adopted? *cui bono*? how many such persons has Mr. Goldson inoculated?

But I have shewn what will sometimes result from second inoculation and exposures to the Small-pox :---the case of Mr. Miles happened in 1793, many years before Dr. Jenner announced this practice---unquestionably others might here have been adduced, had they been sought for.

Even with the little knowledge we possess, we might without presumption have concluded, *a priori*, that whenever the absorbents of the skin can be stimulated to take up a second time the matter of Small-pox, or any acrid adventitious principle, or perhaps even the matter of common abscess, that the extraneous introductions would soon be felt by the constitution, and after a little disturbance, ridden of it through some one or other of the great emunctories of the system, the skin, the urinary passages, or intestines.

How frequently do we see in practice anomalous determinations on the skin, (and these must happen from the causes we have mentioned or from the conveyance of some acrid principle from the stomach and first passages into the system.) which would puzzle even a Willan to define and arrange.

Many of those have I formerly seen, long before the Cow-pock was recommended to our attention, which have so much resembled the Small-pox it was often with great difficulty that I was able, then, to distinguish them, and I cannot doubt that I have in some instances mistaken them.

Varicellæ, or Chicken-pox.

So notorious is it that the Chicken-pox, and the benign Small-pox, have been so often mistaken for each other by men of judgment and eminence in the profession 'tis almost needless to advert to it;---these diseases have many characters in common, and possibly stand in a nearer relation to each other than has been generally believ-

ed.—It is almost difficult to say, sometimes, where the benign Variola begins, or where the Varicella ends.—If I had time and room here, I could detail an hundred instances almost of these mistakes.----Mr. Creafer, that eminent Vaccinist at Bath, has lately observed in a letter to me,----“That the friends of Vaccination have yet a persevering and incessant duty to fulfil,”----and goes on to tell me, “that he has very lately detected a gentleman in Bath, representing a *common case of Chicken-pox* as Small-pox after Vaccination; that he has made it public, and desires me to mention the circumstance as an example; that the case was made known to him as the principal Vaccinator in that district; but that the gentleman did not expect to have his assertions investigated.”——Were we to pay a little more respect to nature, and rely somewhat less on our own fallible judgments and powers of discrimination, those cases of Chicken-pox would not be often obtruded on the public with so much circumstance.—Formerly after the inoculated Small-pox they were passed by as things of course----the time will

come when this will happen in the same way after Vaccination.

Vaccina notha, or spurious Cow-pock.

Nothing in Mr. Goldson's pamphlet has more surprised and puzzled me than his remark, that he *he has never seen even an approach to the pustule or spurious Cow-pock*, or scarcely heard of such an occurrence in that neighbourhood. Truly we have seen them many times at Plymouth.—(What natural causes can have produced these and some other remarkable diversities in these two maritime towns, situated so near each other, and placed to common apprehension in circumstances nearly similar?)---But I do not know in my range of medical friends that we have as yet been off our guard;—we have seen two, I believe three instances, where the Vaccine Vera was distinctly marked on one arm, and the Notha as remarkably on the other; in the same subject and from the same lymph.---Similar occurrences have been published in the Medical Journal, a periodical work of vast convenience; to the editors of which the medical world are

much indebted for their attentions to every circumstance connected with the Cow-pox.—The first paper in the first number of it, written by Dr. Bradley, was that which first rivetted my attention to the subject;—in the 17th N^o of this work, Earl Derby in a letter to Dr. Denman, relates a case which it will be very important to recollect in practice, (and more immediately important to the young Vaccinist,) in which a considerable local affection was three times produced in quick succession, on the arms of a child, differing widely from those on the arms of some other children who were vaccinated at the same time. The last impression was only characteristic of Cow-pock.----Had these fallen on some ground, tares would have sprung up and choked the good corn.

Does not Mr. Goldson speak of some cases all of which ran rapidly to maturation or suppuration?----were not these confessedly spurious?—I do not admit pustulation, maturation, or suppuration in any stage of that scheme of Vaccination which deserves to be called Vaccination;

in short, not into the Vaccine Vocabulary. —I am strictly correct, I believe, when I say, that there is no intermediate stage between the limpid serous state of the vesicle, and commencement of the scabbing process.——If friction, adventitious inflammation, or any cause changes the beautifully transparent lymph into a semipurulent, or into a state even less purulent than that, the succeeding scab, or exsiccated lymph, never takes on that almost corneous and almost diaphanous character, (may I be allowed to use the terms,) which with great deference I am inclined to say, more strongly mark the true scab, than any other designation that has yet been given to it.---Although it will be judged out of place by some, and I allow it will be so to those for whom this pamphlet was first more immediately intended,—I will here print a definition of it :---

Vaccina Variola Jenneriana.

Vesicula rotunda, magnitudine pisum dimidiatum, colore albedinem in imo unguis humanæ valdè referens—efflores-

centiâ erysepelaseâ latè nitidèque cincta—
in medio sessilis alioquìn lymphâ pelludi-
cissimâ undique turgescens, mox in sub-
nigram vel nigram et quasi corneam
crustam desiccatura.

Dr. Jenner has, with his usual sagacity and nice discrimination, already discovered that recent cases of *Tinia capitis* and herpetic Blotches, or of *Tinia capitis* connected with the latter, will generally render the progress of Vaccination irregular and inefficient.—In a most valuable letter with which he favored me a few days since, he writes,---“about ten days ago I made a public Inoculation of two children with *Tinia capitis*, and who are affected too with herpetic blotches upon the body and limbs; sort of ring-worms; they have both the spurious pustules; an efflorescence appeared on the 4th and 5th days—all are semipurulent, except one, which scabbed, (the scab soft and pale brown like the Small-pox,) on the 7th or 8th day.”—He suspects that the same causes equally influence Variolous Inoculation; and may serve therefore, he thinks, to account some-

times for the failures in either practice. —It is my hope and it is my belief that this accurate observer will go on to detect other causes of failure.

Mr. Goldson conjectures that the activity and efficiency of the Cow-pock is at least diminished, if not lost, in its successive passages through human subjects and thinks, therefore, that casual Vaccination, or the first Vaccination from the cow is only satisfactorily prophylactic; and indeed he seems to question the efficiency of this unless performed on the Fingers.——He has found, he believes, strong arguments in the mildness of the Cow-pox as we now have it and in the absence of that blue tint which he asserts always characterizes it on the teat of the cow, to prove the degeneracy of the Vaccine Principle.-----Having never seen the Pock as it presents itself on the cow, I am unable to speak from my own observation to this appearance of it;—but if I do not much mistake, I think I have many times seen it in some stages on the human arm.——In the exquisitely-colored print which that great and indefatigable

Vaccinist Mr. Ring has prefixed to the 2d vol. of his valuable work we see the blue tint very delicately touched.— Is not a bluish tint common to every tumour of the carbuncular and erysipelatous kind?---Cow-pock is unquestionably carbuncular and erysipelatous;---but to assist me here, I applied as usual when in doubt, to the great promulgator of Vaccination;---let us see what he says,---“ I have seen blue tints, and white tints, and amber-color tints on the cow, and immediately from the cow, over and over again.----On the 10th, 11th, or 12th day it is not uncommon to see the blue tint on the human arm, nor is it uncommon to see the cow pass through the disease without any blueness about the pustules on the teats.”

Although I am afraid we shall much exceed the limits which we had first prescribed to these Minutes, I cannot dismiss this part of the subject, and that which relates to the fingers, without a little more examination.—Mr. Goldson in his extensive practice, has seen a thousand times inflammations and abscesses on the

inside of the fingers; and on the palm of the hand; and he must recollect the vast pain, &c. that these almost invariably produce. I believe the cause is obvious; the hardened and thickened cuticle;--this, in that description of persons to whom those accidents mostly happen, has necessarily acquired an immense thickness and induration, and covers the palm of the hand and the inside parts of the fingers, with all the effects of a Theca, or an aponeurotic expansion.——As soon as the subjacent skin is irritated to encreased action, (sometimes from the slightest stimuli,--a puncture of a needle, a thorn, or even the slightest scratch,) the blood vessels begin to distend; from the resistance of the incumbent stricture the pain early becomes great; the nifus of the vessels every moment encrease; and the natural consequences of encreasing action on one side, and unyielding resistance on the other, are indescribable pain, very violent fever, inflammation along the muscles and lymphatics, and general tumefaction of the whole arm, terminating in successive abscesses and sinusses, with at length the loss perhaps of several phalanxes of

the finger, and, from the general adhæ-
sions between the interstices of the mus-
cles subservient to the motions of the
fingers and hand, a very imperfect use
of them. I would not, by any means, be
understood to say that effects to this
extent, do often or ever have happened
in casual Vaccination: but I would
indeed be understood to say, that if the
application of even the benign principle
should hereafter be transferred from the
external part of the arm to the internal
part of the fingers, and the numbers so
vaccinated should bear any proportion to
those that have been vaccinated in the
usual place---that these consequences, or
something very like them, would now
and then be met with. Mr. Stephen
Hammick suffered more, about two years
ago from a Cow-pock which accidentally
formed on the tip of his thumb from
wiping a Vaccine Lancet, than all my
vaccine patients, perhaps, put together. I
have been disappointed that this gentle-
man has not given me a few minutes of
this accident.

The distress of the poor animal too, (for

I apprehend she suffers sometimes a great deal,) is, in all probability, the effect of the same cause,---that is thickened cuticle, ---which must necessarily follow the frequent and long-continued friction in the act of milking. Were the fingers so much *all nerve* as Mr. Goldson believes, they would, I fear, be but ill calculated for the hourly and momentary offices we have to perform with them.---I concur therefore entirely in this gentleman's opinion that there is *something* in the locality of the Infection, but, truly, it is a *painful something*.

Mr. Goldson says, "to suffer zeal for the discovery to shut their eyes to conviction, and by deeming every failure spurious, to conceal it is beneath the dignity of the profession." I have always understood that humanity, ardour, and knowledge are the requisites which constitute what is called zeal in the profession of medicine, and that hence this profession has taken rank among those that are designated by the term Liberal. Such zeal then in such a profession is certainly not so immediately calculated to narrow

the views and shut the eyes of those who practise it as Mr. Goldson seems here to insinuate: after the opinion I have given

Addendum after "painful something."

And does Mr. G. really believe that *much disorder* in the system is indispensably necessary to efficient Vaccination?—Here we are again immediately at issue—in by far the greater number of cases where this happens I am so much inclined to consider it adventitious, that I would venture to recommend, as a general good rule, to say of every case of Vaccination so circumstanced---“*Suspecta habere bona sua debet.*”

WHY NOT UNDERSTAND.

To deem those failures which are really not so, or in other words to misrepresent

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the views and shut the eyes of those who practise it as Mr. Goldson seems here to insinuate ; after the opinion I have given in what zeal appears to me to consist I shall not presume to arrogate to myself any considerable portion of it, and shall therefore only say, that my activity in prosecuting the practice of Vaccination has indeed been great, that it was early great, and that it has kept pace with my success. I am not aware that I have ran at all wild of it, or that a foolish attachment has shut up my eyes ; but I do know that it is the opinion of some of my friends that the Jennerian Practice has served rather to open than close them----be this as it may----we will look a little at the other side of the picture and here truly we shall find it strongly represented that there are many persons who, with their eyes as open as they can be, and as fully directed on objects as illuminated too as they can be, yet cannot see :--- ‘ seeing they cannot see, and hearing they will not understand.’

To deem those failures which are really not so, or in other words to misrepresent

in order to conceal them, is a conduct in every point of view "beneath the dignity of the profession." I will never acknowledge a man who can so conduct himself to be called a Vaccinist, and I hope that no man will take up the Vaccine Lancet who can be unworthy enough to conceal or distort any occurrences which arise in the practice of Vaccination. I am very happy to say that my acquaintance does not lay among such here,--- my medical friends and neighbours are men of ability and generous minds, who would feel indignant in the extreme were they judged, or even suspected capable of imposing false statements on the public, with a view to conceal the defects or inefficiency of Vaccination. We do not make these remarks to repel any seeming application of Mr. Goldson's observation to ourselves ---no---we do not assume so much importance; neither do we believe that Mr. Goldson has in view any personality: Mr. Goldson will give us credit that in making them we have none---yet we will observe, and this will not surely be deemed illiberal, that Mr. Goldson wrote these passages rather, *currente calamo*, with

a flowing pen.----I have heard something like an idea thrown out---Plymouth *versus* Portsmouth---I do not at all like such an idea---If it has arisen from the circumstance of Mr. Goldson's late pamphlet and our exertions here in favor of Vaccination, as an individual I shall reply---that, however strong in arms, and however confident of success, I should never declare war so long as I could preserve peace with dignity to myself and safety to my friends: rather let us at all times, and more immediately on the present occasion, unite, strengthen and repair our Vaccine Forces, in these two important arsenals, with that skill and attention which the resources and activity of the destructive and malignant foe with whom we have to combat, always demand;----then let the plastic genius of some Jenner direct, and like the other national forces which proceed in union from these ports, we shall soon, (and happily too without blood, without all the pomp and circumstance of war,) and always be victorious against our common enemy, and possibly and probably at no distant period, wholly exterminate him.

I am afraid the preceding observations have ran too great a length and that I have delayed too long the detail of those Experiments which form the groundwork of this publication ; the Experiments will best speak for themselves ;---I solemnly vouch for the truth of them. I must again here repeat my obligations to the Revd. Mr. Hitchins for entrusting me with his child so early in the practice of Vaccination, and again now without hesitation to make oneⁿ in the following experiments.---The example of this worthy man, in the first instance, facilitated the introduction of the Cow-pock into this large town ; and his example in the present, will tend to establish it. I will only add, that if these experiments should prove to be as useful as my earnest wishes are they should be,---I shall enjoy the most delightful reflection, that I have not lived a useless member of society ; and be thankful that I have lived at the time when our Countryman announced his great discovery---a discovery which I think ought to be received and acknowledged as another divine interposition in favor of this land---- a discovery which ought to

attach the regard of every people in the world, and which must, erewhile, add to the rank and pre-eminence that England has long held in the scale of nations.

The first Minute was drawn up in 1802, soon after the experiment took place;---it has not been before printed, but has been very generally and usefully circulated through these towns.

Minutes of Experiment 1st.

At a time when almost a thousand reports, directly subversive of Vaccination, had crept into circulation, and were very fast taking possession of the public mind; it appeared to me indispensably necessary, unless we had relinquished the practice altogether, to adduce some facts in order to counteract them, which would at once appeal to the bosoms and understandings of every one.----For this purpose, my infant who was ten months old and whom I vaccinated eight months ago, was taken this day, (January 23d, 1802,) into the small room of a poor woman,---

Elizabeth Cock, in Cross-street, in this town.---who was ill of the most malignant Small pox. of which she died on the third day after,---and was there inoculated by Mr. Little, with matter taken immediately from this bad subject. An early and considerable local affection on the arm took place, and gradually progressed till the 7th or 8th day, when it began to shade and in a few days dried off. This Inoculation was neither attended with the slightest constitutional effects nor followed by the smallest vestige of Small-pox; and my babe is now, thank God, in the most perfect health. I know not that a stronger test than this can be imagined; if I did, embarked as I am and pledged as I feel myself on this memorable occasion, I would not hesitate a moment to employ it, even in the person of my child,----and yet those who know me will, I do not at all fear, most readily and most fully acquit me of any want of parental feelings;----truly no other motives than an imperious sense of duty at this time to the public, and unshaken faith in the protecting powers of the Cow-pock, and an anxious wish to assist in establish-

ing the deserts of a discovery, which appeared to me incomparably the most important and consequential in the annals of medicine, could have carried me to such length of experiment. I will mention another strong circumstance---about a year since I vaccinated a servant of a very respectable farmer of St. Budeaux, four miles from this place---with a view to ascertain the efficacy of a practice, the nothingness of which does not often satisfy, she several times with her mouth close to a fellow-servant's, who was then loaded with a full crop of casual Small-pox, inspired his breath with intire impunity. This fact and the subjecting my dear babe to the atmosphere of a very small room, saturated with the most virulent variolous principle, and at the same time to an Inoculation with matter taken from this malignant case in the moment of its most sublimated activity, are tests of that decisive character, they may justly enough be termed the *experimenta crucis*, ---and would, it might be expected, if we did not know how difficult it often is to root out preconceived opinions, silence the most obstinate, and proselyte the most incredulous. Dock, 1802.

Minutes of the 2d and 3d Experiments.

July 4th, 1804.

On this day I inoculated my two boys with the matter of Small-pox, in a warm fluid state, within three minutes of the time when I took it from a child full of the casual Small-pox; and on the seventh day of the disease. This was inserted into at least three punctures, in both arms of the eldest, and into as many in one arm of the youngest--in both arms of the eldest because he is a hardy boy, and I thought his skin less irritable; *I do not believe that I ever inserted Small-pox matter before with quite so much attention.* The eldest boy is 12 years old, and had been inoculated more than 11 years before, and suffered a good deal from the Small-pox; (the susceptibility of Small-pox in our family is very remarkable;) the youngest is 3 years and 4 months old, and had been vaccinated 3 years and 2 months before, and was the subject of the preceeding experiment.

July 5th.

At the place of insertion there is to-day

a redness in the three arms, nearly the breadth of two eighths of an inch; the cuticle is apparently a little raised; feels somewhat thickened and hard; the color of the impression on the arms of the eldest is a deeper red than that on the youngest, in which there seems to be a slightly yellowish tint; the cuticle on this child's arm is certainly more raised than that on the arms of the eldest, and has indeed something the appearance of incipient vesication.

July 6th.

The inflammation on all the arms to day is larger than yesterday and more prominent; that on the arms of the eldest seems to be taking on the same slightly yellowish tint as that on the youngest, and has also the appearance of incipient vesication.

July 7th.

The inflammation apparently less, and what yesterday seemed incipient vesication is now exsiccating into a yellowish scab: these remarks equally apply to the three arms.

July 8th.

The affections on the arms of the eldest boy appear larger than yesterday ; are more inflamed ; have more of the carbuncular feel, and are attended, he says, with a great deal of itching : he spoke of itching yesterday after I saw him ; the appearances on the arm of the youngest are in every respect nearly as yesterday.

July 9th.

All the characters on the arms of my eldest child yesterday are unquestionably encreased to-day : these are attended with a faint efflorescence larger than the surface of a sixpence ; but no part of the affection conveys the idea of active inflammation ; the affection on the arm of the youngest is to day marked with more of redness round the base of it than any time since the Inoculation, and I cannot trace it up to friction or any other adventitious circumstance.

July 10th.

The inflammation on the arms of the eldest boy yet advances ; the efflorescence is now at least as broad as a shilling ; (Mr.

Andrew Sargent measured it, and says, in his minutes more than an inch broad;) he has no complaint---itching excepted; the encrease of inflammation in my youngest child's arm yesterday must have been accidental, as it has to-day totally disappeared; a pale brown scab only remains.

July 11th.

All the characters of inflammation, efflorescence, &c. on the arms of the eldest child, are rapidly disappearing to-day; on the apex of the affection there is a little maturation; no indisposition; the scab as yesterday on the arm of the youngest; perfectly dry, without a shade of inflammation:----unnecessary to make any further remarks on this child; he has not, to my knowledge, felt a moment's indisposition during the process.

July 12th.

The scabbing process on the arms of the eldest child nearly complete.

July 13th.

The scabbing process quite completed, and every appearance of inflammation totally gone:-----unnecessary to make further remarks.

Minute of Experiment 4th.

July 5th, 1804.

To try also the effects of casual exposure to the Small-pox on my youngest child, he was this day taken into the close room where the child lay from whom he had yesterday been inoculated, and remained there some minutes.

July 23d.

This is the 19th day, inclusive, since exposure to casual infection; no traces of Small-pox have appeared; if they yet follow, every circumstance will be minutely recorded and given to the public.

The benign Cow-pock has now in the person of my youngest child completely and unequivocally resisted *at different and distant periods* the poison of Small-pox; twice in the way of Inoculation and twice also in the way of exposure to casual infection; and it should be recollected that that these Experiments were conducted with every circumstance that could be devised to give them activity.

July 13th.

This day my neighbour Little with his accustomed friendship told me with much earnestness, that two children, who were within ten yards of the house in which my family were at Stoke had very suddenly died of Scarlatina, that the last had died this morning after an illness only of 35 hours, and that the other a day or two before, after an illness nearly as short---- I lament to say, that although in consequence of this information, I removed my children in less than four hours from the village, the youngest, in the evening, between six and seven o'clock of the next day, became suddenly indisposed, and after having passed a very bad night, the Scarlatina with much fore throat were distinctly marked on him the following morning;----until between six and seven o'clock of the evening of the 14th, he had never been more active and in every respect more in health than during the ten preceding days;---indeed a hardier and healthier child was nowhere to be met with.

July 23d.

My dear child has now passed through

the febrile stages of this dreadful disease under circumstances of great severity :--- with every prospect before us, thank God, of a regular recovery, I am at the moment I write this a happier man than I have ever been since I knew what existence was.---No circumstance can more strongly mark the susceptibility of contagion in this child than his taking on so readily the Scarlatina: the previous Inoculation having gone through all its stages three days before the seizure: this circumstance places if possible in a more striking point of view the negative state of the child's system, with respect to the poison of Small-pox and indeed, although it has been an afflicting circumstance to the child and my family,) gives an additional weight to these Experiments; which I hope and believe the utmost ingenuity of any man, the most adverse in the world to the Cow-pock, cannot lessen. Vide the letter of Drs. Remmett and Woolcombe, in the Appendix.—My child has been very affectionately attended by these gentlemen; seen every day by Dr. May and my other medical friends, who have been *kind indeed*. Dr. Mc. Gennis; Physician in the Royal Hospital, at Stone-

house, visited us also with great friendship.

Minute of the 5th Experiment.

July 5th, 1804.

With the most ready acquiescence of the Revd. Mr. Hitchins, I took his little girl, whom I had vaccinated in the early part of the year 1800, into the same room which had been saturated many weeks with the Small-pox; she shook hands twice with the child full of, and at the height of, the Small-pox, and remained in the room some minutes.

July 23d.

This is the 19th day inclusive since exposure to infection, and Miss Hitchins has not experienced a moment's indisposition since her visit to the little patient in the Small-pox;----if after this they occur, the public shall be minutely informed of it.—Vaccination has protected this young lady four years and four months against the Small-pox; two years ago a servant of Mrs. Hitchins had the Small-pox very badly, the child was often with her.

It has been seen that Mr. Little inoculated my child in the first experiment, and it will be seen also that he has very particularly attended to all the circumstances as they arose in the last; these inoculations suggested to him some important observations, which he has given me in the most handsome manner. His letter will appear nowhere with so much propriety as immediately after the Minutes.

July 23d, 1804.

DEAR DUNNING,

That the impression of the Vaccine Virus, when given to the human constitution, was a permanent protection from the action of Variolous Virus, I did consider a fact so well established in medicine as not to admit of doubt.

Mr. Goldson, of Portsmouth, having however published some supposed failures* of the protection afforded by Vaccination; the tendency of which must be to produce the greatest doubt with some, shake the faith of others, and make unhappy numbers of those whose children have been vaccinated, as to its permanent security: and the cases being drawn up and detailed with the appearance of great truth and candor, calls

* I cannot but call them supposed failures, my own practice makes me doubt them real, and I conceive it must have arisen from some of those anomalies that are so frequently met with both of Vaccina and Variola.

for the united testimony of all who have been extensively concerned in the Vaccine practice.

Since the beginning of the year 1800 I have vaccinated more than 1000 persons.---A town situated as this is, few places are so well calculated to ascertain and detect failures, had Small-pox occurred after Vaccination. It contains a population of more than 25000, within a circumference of rather less than two miles.---The casual Small-pox have not been altogether out of it for the last six or eight years, often very rife during that time, but no instance whatever has come to my knowledge of Small-pox happening after Vaccination; if any such had occurred, I feel no hesitation in saying I should readily have been made acquainted with it.

The zeal which you have shewn to arrive at truth on this subject, and the manner in which you have conducted Experiments for that purpose, do honor to your heart and your understanding;---no one who knows you can for a moment believe it to have been undertaken from a claim to, or desire for distinction, but from the most pure and philanthropic motives, connected with the best interests of humanity. The Inoculation which you requested me to make with Variolous Virus, after Vaccination, on your youngest son, more than three years ago, you have already given the world, but since the publication of Mr. G.'s pamphlet you have again submitted him, as well as your eldest son, to the action of Small-pox. (See Minutes of the Inoculation.)

In the course of these distant Inoculations, some ideas have occurred to me, which are perhaps not unimportant as to the present question.

In the first Inoculation with Variolous Matter, eight months after your youngest son had been vaccinated, the susceptibility to receive the Small-pox appeared

very great. A distinct, well-defined, inflamed circle took place in less than 24 hours, round the inoculated part the size of a shilling; a pustule formed in the usual way, which crusted on the 6th or 7th day, but no constitutional indisposition whatever followed.

In this second Inoculation, after a lapse of more than three years, the local action of the Variolous Matter on the arm, was very much less than in the first Inoculation, and the Pustule crusted rather sooner.

Here then lapse of time, instead of weakening or wearing off the effects of Vaccine Impression, seems to have rendered the child's constitution less susceptible of local action on the place of insertion and to have left the constitution perfectly and permanently secure from Variolous Action. The case of your eldest son bears strong marks of a greater susceptibility to local affection on his arms, after Variolation made ten years ago, than the youngest three years after Vaccination. Perhaps the susceptibility to receive Small-pox was if possible very great, as a tendency to have them soon pervaded your family.

Allow me to add the case of a lady in this neighbourhood who lately had the casual Small-pox,---Mrs. Rogers, wife of Mr. Rogers, Surgeon, at Millbrook, was inoculated when an infant with two other children of the same family, and with matter from the same source. The arm inflamed greatly; fever attended, but no eruptions followed; she was kept with the other two during the disease, both of which had it accompanied with eruptions; she was pronounced to have passed the Small-pox; has since been several times exposed to casual infection; particularly when about six years of age, slept in a room with another of the same family who had the Small-pox, but

resisted infection until lately; her child, now about nine months old, was vaccinated by Mr. R. when three months old; about a month after this Mrs. R. was much indisposed from a sharp attack of fever, but no suspicion was entertained of what nature it was, until about the second or third day numerous eruptions appeared over the whole body, which proved to be Small-pox; she had a very large crop and got through them with difficulty, having been in great danger under the disease.—The child was principally supported at her breast through the whole disease, and though constantly in contact with variolous matter, not a pustule ever appeared even on the child's face or any part of the body. This I conceive is, (as far as a single instance can prove,) a pretty strong proof of the security from Small-pox after the Vaccine Impression has been duly made.

I am yours most truly, &c.

D. LITTLE, Surgeon,

Plymouth-Dock.

P. S. Having alluded to a constitutional susceptibility to Small-pox in your children, I think the seizure of Scarlatina, so immediately after the effects of the second Inoculation were passed over, in your youngest son, a strong proof of the great disposition to receive any contagious poison into the system, and is with me an argument that if he had not been fully protected by the Vaccine Impression, that he would have been as readily disposed to receive the variolous poison, when applied to the surfaces of the body on the 4th of this month by Inoculation, and on the 5th generally by Exposure, as he was that of the casual exposure to the contagion of Scarlatina.

The following communication with which I have been politely favored by Mr. Embling, Surgeon, at Knacker's Hole, a village about three miles from this town, contains some singular events which occurred to this gentleman in his late Inoculations for the Small-pox ; these have necessarily excited much attention here, and have very generally and with great acrimony and violence been placed to the account of the Cow-pock, notwithstanding Mr. Embling has invariably asserted that he has not employed it. Mr. E. has stepped forward very professionally and detailed the circumstances of these remarkable cases with a liberality and ingenuousness which reflect on him the highest honor, and which will I have no doubt very strongly recommend him to public attention and public approbation, —I beg him to accept my best thanks.— Very true it is, I believe, that the unoffending Cow-pock has been already in a thousand instances hardly dealt with ; but now alas ! we find it doomed to bear misfortunes not its own---I have been often surprised to hear these and such-like reports related with the most ap-

parent alacrity and satisfaction, and I have met with a few persons, men of worth, and in every other respect of good sense, who have really astonished me by their scepticisms on this subject.

Immediately after Mr. Embling's paper I shall print an extract from an Essay on the Inoculated Small-pox, by the late Dr. Mudge, of Plymouth, which tells us that some circumstances nearly as remarkable as those which lately happened at Knacker's Hole, happened many years ago at Plympton, a neighbouring town.

Knacker's Hole, July 17, 1804.

SIR, -

In order to do away, if possible, the prejudices of the people around this neighbourhood, as well as to clear my character from the many unjust attacks made against it, respecting the late Inoculation, and as I know no one more anxious for the safety of his fellow creatures, or more willing to elucidate any false impressions conceived to the prejudice of Vaccination, I have submitted to your perusal the case of Mrs. Andrews's child of St. Budeaux, which I am convinced you must have heard much spoken of, as also some facts relative to the Small-pox, which I hope will tend to prove that even this disease is equally fallible as the Vaccine, and in many points as yet imperfectly understood, and that the constitution is very frequently insusceptible of infection.—*I do assure you I have not, as has*

been reported, inoculated for Cow-pox in lieu of Small-pox, and so great was the prejudice against Vaccination that I durst not venture, unless with the consent of the friends, without running great hazard of my reputation, —tho' the failure of the Small-pox, in several instances, has so much caused the unjust suspicions of the people, —I have merely stated facts; and if you, or any medical gentleman, who has had more experience than myself,—as I wish it to be publicly seen,—will explain to me the reason why these circumstances should have taken place, I shall feel myself much indebted to you, or them, and show myself fully open to conviction whenever I may lay under any misconceived idea.

I am Sir,

with much respect,

your obedient servant,

J. EMBLING.

To

Mr. DUNNING,

Surgeon, Plymouth-Dock.

— Andrews of the parish of St. Budeaux, made an application to me, about the ninth of April last, to inoculate her child, then a year and half old, for the Small-pox;—I advised her by all means to have the Cow-pox, but to no effect;—you had already recommended this practice and she had consented to it, but not having seen you for some days, and in the meantime having heard that it would not *answer*, was now determined on the Small pox : the child was accordingly inoculated, (the matter taken by myself *in presence of Dr. Bridgeman's apprentice*, the day before, from the child of a shoemaker in St. Andrew's-street, Plymouth, then

a patient of the dispensary who had a very abundant fine sort, and *whose mother with her infant, I was informed, had a few days before died of Small pox of the most confluent kind.*) The arm continued progressively to *inflamm*e for eight days, during which time she lived at St. Budeaux, but came occasionally to show it to me.

So much were the people of St. Budeaux prejudiced (whose children had sometime been vaccinated) at this time against the Cow-pox they requested that this child in the Small-pox Inoculation might be removed from the village; she therefore took it to her sister's who then had two children in the eruptive state of Small-pox from Inoculation. She remained there nine days; during which time I saw the child from day to day. The arm at the time of her coming at Knacker's Hole had matured, and continued for many days after to discharge very much; it had a very slight attendant fever, during some time of her stay here, but was never kept from its usual diet and exercise; the child had also several small eruptions of the back, which continued out for two or three days, but never matured, then disappeared, and none were seen afterwards. The child during its stay here, as well as the mother, slept in the same bed as the two children before inoculated, who had them extremely numerous; at the end of eighteen days, when the arm was perfectly well, and the crust had fallen off, being questioned respecting my opinion whether the child had or had not passed the disease, I gave it as my firm belief it had; in consequence of which they were satisfied, and returned to St. Budeaux.

Some time after this I was sent for to visit the same child, who, I was informed, had been taken into Plymouth, and from a supposed conviction of the child's having passed the Small-pox, was taken into a room

where the contagion of Small-pox had been for some time ; the child two days after its return was taken ill, and when *I saw it* two days after, found it labouring under Small-pox of the most confluent kind ; I attended the child daily for nine days, at the end of which time the child died.

I inoculated twenty-six on the same day, 9th April, and with matter taken from the same subject as that with which Mrs. Andrews' child was inoculated, five of which number did not take, but the others (21) had them plentifully ; the five which did not take were afterwards inoculated with fresh matter taken at Plympton ; their arms inflamed and matured, with some constitutional affection, but even this did not secure them from Variolous Contagion, as two of them after four weeks had elapsed caught it in the natural way, and the other three, when those had got them, were once more inoculated with matter again obtained from Plymouth, and passed through the disease in a very satisfactory manner. I inoculated several children with matter taken from the arm of Mrs. A.'s child, when it first matured, and all of them passed through the disease very favorably.

These circumstances, *which I vouch for on my honor*, are to me so obscurely hidden that I am left still in amazement how to account for them :---the only reason I would then conceive is, that at that time the weather proved rather cold, from which cause, not doubting in the least the efficacy of the contagious matter, I was led to imagine the child from being kept exposed to the cold atmosphere, might have kept back any eruptions, which consequently must be expected to follow the Inoculation, and when the warm weather again came on, the infection which had lain dormant in the constitution was again roused with renewed vigor :---

as many of the children who had for a month before failed to take the infection from Inoculation, at this time sickened and eruptions came out, and passed well through the Small-pox of the most benign character — Several children, I may say four or five, during my inoculating the parish of Egg-Buckland, the number of which were near one hundred and twenty, did not take the infection the first, second, or third time, but afterwards took the disease in the natural way.

A servant of Mr. Giles of Compton, I have inoculated three different times in both arms, with matter gained at Plymouth, Plympton, and Egg-Buckland, and she remained, whilst under the influence of the Inoculations, in the same house where the contagion of Small-pox, of the most confluent kind, was prevalent, and yet has never had any eruptions about her. Dr. Gasking attended with me the person ill in the house.

Extract from Dr. Mudge's "Dissertation on the inoculated Small-pox," page 20.

"Messrs. Langworthy and Arscott, Surgeons, in the spring of 1776, inoculated at Plympton, a neighbouring town, forty patients, of which number thirty were infected with crude matter, from the arm of a young woman; five days after she herself had been inoculated with concocted matter, which did eventually produce in her a pretty smart fever, and a sufficient number of eruptions. The other ten were inoculated with matter of another kind, which I procured, in a concocted state, from a pustule of the natural Small-pox. The arms of all the forty patients took the infection; and the latter ten, after the eruptive fever, had the Small-pox in the usual way. Of the other thirty, though the infection took place on their arms, so as to inflame them

considerably, and to produce a very large prominent pustule, with matter in it, on each side of them, yet not one had any eruptive fever, or a single subsequent eruption on any part the body; but about the eighth, in some the ninth, and in others the tenth day, the inflammation began to disappear, and about the twelfth or thirteenth the pustules on their arms scabbed off.

“ It is to be remarked too, that the matter which was in those pustules *having been used to inoculate others, produced on them exactly the same appearances*, unattended also with either Fever or Small-pox. Notwithstanding the *arms* of those patients afforded the most indubitable proofs of infection, yet, as the constitutions of none of them appeared to have been infected with the Variolous Poison, and it was therefore highly uncertain whether they were secure from future infection, it was thought right to inoculate the whole number again; accordingly five were inoculated from the Natural Small-pox, and and twenty-five from the Artificial, but all with concocted matter, taken subsequent to the eruptive fever. The result was, that every one of them had the eruptive fever, and succeeding eruptions: in short, they had the Small-pox in different degrees, but all in the usual way of inoculated patients.”

Before we close this little work we will return a little to the Cow-pock, just to observe that my belief in the beneficial influence of the benign principle of Cow-pock, on some delicate and diseased constitutions, is more and more confirmed. So many consequences, apparently such, have fallen immediately under my own.

observation and that of my friends here, I again venture to say that Vaccination may often be resorted to in this point of view, with considerable expectations of success. Mr. Cummings has lately published in the Medical Journal several cases of Atrophia, in which its utility will hardly be denied, and I am favored with the following letter from a very respectable surgeon, at Exeter. The Scarlatina, in this case, it is very probable, soon supervened the insertion of the Vaccine Principle, but those medical men, who daily see the secondary and melancholy effects of this formidable disease, will not incline to refer that vast improvement of health which so remarkably followed this case of Vaccination, professedly employed here as a remedy, to the deleterious action of Scalatina.

DEAR SIR,

Agreeable to your request, I send you, as nearly as my recollection will allow me, the symptoms attending my two daughters, whilst under the influence of Vaccination (the eldest about 15, and the second about 10 years of age). Nearly five years prior to the last Inoculation, they had received the Variolous Infection, which produced in both the regular Small-pox, *i. e.* there were eruptions which came to maturation.—

I am thus particular, because I wish to remove all doubt of their having gone through every stage of the Small-pox.—On the 3d or 4th day after the insertion of the Vaccine Virus, the areola on their arms formed and extended in the usual manner; about the 8th or 9th each complained of lassitude and slight head-ach, accompanied with slight fever; about the 14th day an eruption of the erysipelatous kind appeared, (which I had never before remarked,) that sort of rash resembling the scarlatina, unaccompanied with sore throat, during whose appearance, violent pain in the limbs was the only complaint; the pulse at this time beyond 100 in the minute. The adoption of the antiphlogistic plan with mild laxatives entirely removed the disease, and I had the satisfaction to find the health of the youngest (which had prior to Vaccination been in so precarious a state as to make me conclude from the symptoms then present that she was verging on consumption) now improve and has continued so to do, that at this present time she is in perfect health. I have to thank you for the hint, which I do very sincerely, (namely that you should not be surprised if Vaccination proved a remedy for other diseases,) and as the eldest has since enjoyed uninterrupted good health, I judge it perfectly safe, and that the experiment may at any time be tried with impunity, and I hope with success. I am dear Sir, with best compts. to self and family, your obliged and obedient

humble servant,

Fxon,
16 July, 1804.

G. G. SNELLING.

P S. I think it right to inform you that the youngest had been always subject to colds, attended with violent cough, hectic heats, more particularly towards evening, pain in the left side, and violent marine hemorrhages.

Although it has been fully seen, that all my experience has served uniformly to strengthen my confidence in the Cow-pock, I shall reprint the concluding paragraphs of my former "Observations on Vaccination."

"If the practice of Vaccination, instead of promoting the happiness and comforts of life, threatens to entail on it misery and disease, those respectable members of society, who, by just reasoning and accredited proofs, shall convince the public of the impending danger, will be long remembered among the greatest benefactors of the present times.

"I am not blindly obstinate, in my adherence to the opinions which I have now so fully subscribed, and which my present convictions on this remarkable occasion have urged me to assert as strongly as I have been able; for I well know, *humanum est errare*—whenever, therefore, they can be invalidated on good grounds, (which however, I most earnestly pray may never happen,) I shall not fail immediately to relinquish them; and having done this, enjoying as I do the satisfactory and consoling reflection of having exerted here my best endeavours, *pro salute et pro gratia patriæ*; I should not take the least shame for the subordinate part I had acted in prosecution of this most important and alluring investigation."

But the following letter from Mr. Creafer's popular pamphlet must not be omitted; if it is not objected to on the ground that this playful Vaccination was

performed on the Fingers, it must bear prodigiously on the question before us.

“ Lanfdown-place, Bath, Jan. 7, 1801.

“ SIR,

“ As I understand you are publishing a few remarks and cases on the Cow-pox, I cannot withhold that of John Bright, of this parish, a labouring man, whom I sometimes employ. About twenty years ago, being then a farmer's boy, his fellow-servant having milked a cow with a diseased teat, became affected with the Cow-pox, and in a frolic communicated the disease to him, by means of a small scratch on his hand. He has since been repeatedly inoculated without producing any appearance of the ordinary disease. His family have since had the inoculated Small-pox around him, and he has more than once been in the way of the most malignant species of the natural Small-pox, without any sort of effect upon him.

“ I am, Sir, your very faithful

“ and obedient servant,

“ HENRY WHITE.”



APPENDIX.

The following extract of a letter, which I have this moment received from Dr. Jenner, will form a very appropriate and important Introduction to my friends' communications.

Berkeley, July 22d, 1804.

"The trials I have lately instituted here, assisted by my nephews, I can assure you have been severe ones---but thank heaven they have been decisive and without any other aid, must completely overthrow the arguments of Mr. G. All the subjects that I could collect who were vaccinated at the commencement of my practice here, men, women, and children, have been lately exposed to the Small-pox, in a state as highly contagious as possible---they were taken into a room and went to the bedside of a woman covered from head to foot with pustules. All have escaped unhurt, *except at the sight of the ghastly object*. A great number of these had been inoculated six years ago. Phipps too, the boy on whom I made my first trial more than eight years ago, has again been put to the test with impunity."

DEAR SIR,

The result of the experiments which you have recently instituted for the purpose of determining the permanence of that security from subsequent Small-pox, which is effected by Vaccine Inoculation, is so simply and obviously decisive, as to require no comment, and to admit of no collateral support. As however you are

desirous that we should acknowledge our having observed the experiment in its progress, we gladly avail ourselves of the opportunity of expressing our complete satisfaction with it, both in regard to its design and its event, with the conclusiveness of which the occurrence of scarlatina in the youngest subject cannot for a moment be imagined to have interfered. This trial, which can add nothing to our own conviction, long since established, and never shaken by the apparent difficulties which from time to time have transiently obscured the subject, is well calculated to satisfy the public mind, and to remove those doubts which are continually excited by reports of failure, generally vague, often unfounded, and always, in those instances where we have had the means of investigating them, inconclusive.

If it had at all times been distinctly recollected, that the security from subsequent influence of Small-pox, whether casual or artificial, derived from Vaccine Inoculation, is asserted to be an *equal* and not a greater security than that which is derived from Variolous Inoculation, it would also have been naturally expected that this security must be not only *equal* but *similar*; in other words, that persons having passed through the Vaccine Disease would be liable from exposure to Variolous Contagion or Inoculation, to similar influence with that, to which persons having been previously affected with inoculated Small-pox are known to be obnoxious. The necessity of attending to this circumstance was early adverted to by Dr. Jenner, sagaciously anticipating sources of erroneous conclusion. Permit us to suggest to you the utility of adding to your pamphlet two extracts from Dr. Jenner's second and third publications.* The first from page 44 of "Further

* Vide Minutes, page 18.

Observations, &c. 1799," shows Dr. Jenner's anticipation of error, and also affords instances of that species of *similar influence* of Small-pox, to which some individuals are obnoxious equally after Variolous or Vaccine Inoculation. The second from page 38 of "Continuation of Facts, &c. 1800," gives an extreme instance of the effects of second Inoculation of Small-pox in a person who had previously undergone that disease; and, unless this case should be thought to invalidate the security from Small-pox by Variolous Inoculation, the strongest instances in a recent publication cannot be deemed to weaken the proof of similar security from Vaccine Inoculation. In conclusion allow us to express the just sense we entertain of the unremitting zeal and beneficial exertions which you have uniformly employed in removing every impediment to the progress of the new Inoculation in this neighbourhood.

We are, &c. &c.

R. B. REMMETT,

WILL. WOOLLCOMBE.

Plymouth, July 21, 1804:

To Mr. Dunning.

MY DEAR SIR,

Having long since made up my mind from the mass of evidence adduced by Dr. Jenner, and others, and from my own experience, respecting the permanent security (against the Small-pox) afforded by Vaccination. I had vainly believed no further opposition would have arisen to its general, I had almost said universal practice, but finding that it has been asserted by Mr. Goldson that it became insecure after three years; I feel highly

gratified, that you, who have already so ably advocated its cause, and calmed the prejudice of the public mind by well-attested facts, will again step forward and not suffer this offspring of great promise to be crushed in its birth, but will incontestably prove from your own experience, the fallacy of such opinions.

I shall only add that my experience for more than four years past is completely at variance with Mr. Goldson's opinion, which I allow to be candid and ingenuous ; yet when I reflect how many hundred patients were vaccinated in this populous and very crowded town, in the year 1800, where variolous contagion was never absent, and where too, no restraint was enjoined, but every possible communication with the Small-pox encouraged.—When I say all these have passed under my own observation without one solitary instance of casual Small-pox, I think I am almost warranted in saying, it never will happen, when conducted in the way recommended by Dr. Jenner,—yet, it must be confessed that many reports have been industriously propagated in this town, whether by ignorance or design I know not, tending to prove its inefficacy, but I do know that when traced to their source, *Ignis-fatuus*-like, they were nowhere to be found.

If you think this hasty sketch worth your notice, do with it what you please.

I am my dear Sir, with great respect,

your sincere friend,

Dock, July 14, 1804.

ROBERT SARGENT.

To Mr. Dunning,

Plymouth-Dock, 15th July, 1804.

MY DEAR SIR,

Mr. Goldson's pamphlet having very naturally excited much alarm with the public, it was reasonable to expect some one of the faculty would step forth to answer such parts of it as more immediately demand attention; I know no one better qualified than yourself to undertake this cause, from your extensive practice and judgment, and you will give me credit when I assure you I was much pleased to find you engaged on the subject. I shall forbear to make comments on the different parts of his observations, as in conversation with you, at various times, our ideas so perfectly coincided. I cannot however pass over one part of his pamphlet, where, in page 9th, he says, "in no instance have I myself seen any approach to a spurious disease, and very few indeed to my knowledge have occurred." As I understand Mr. Goldson to be a gentleman of extensive practice, of course he must have vaccinated a considerable number of persons; and he certainly has been particularly fortunate to succeed in every instance in producing the genuine disease. I have vaccinated some hundreds, and have met with a great many spurious cases, so perfectly marked, that even in the early part of my practice I declared them to be so, and pronounced my patients by no means secured from variolous infection. In the month of May 1800, the Small-pox broke out amongst some children belonging to a detachment of Artillery, in a long range of buildings rented by the married men of that corps; I was applied to, desiring I would vaccinate the children who were not infected; to this I objected, considering much disgrace might be incurred from the consequences likely to ensue; I was however, after much argument with the officers, prevailed upon

to comply with their wishes : previously however to this step, I considered it highly proper to represent the probable consequences in such a situation ; and tho' I might vaccinate children apparently in health, yet there was no certainty they had not already received variolous infection : this turned out generally to be the case, and tho' in every instance the local infection took place, yet, for the most part, a spurious disease prevailed, and seven or eight children, so treated, were seized with and died of the natural Small-pox : in these cases a considerable inflammation took place on the 2d or 3d day, extending in several instances from the shoulder to the elbow, which continued till the 7th or 8th day, when it suddenly disappeared, leaving a common scab on the place of insertion ; these have been given as instances of failure ; in private practice I have met with similar instances of an equally spurious kind.

I am so perfectly satisfied of the security given to the system by the *genuine* Cow-pock, that I should deem it vain to offer any remarks on that subject, after such a mass of evidence produced by the first abilities in Europe. In a matter of so much importance to the World at large, I cannot but feel myself obliged to Mr. Goldson for bringing forward remarks stated with candour and conviction to his own mind, more particularly as in the end I am convinced they will serve the cause,

with much regard,

I am, my dear Sir,

most sincerely yours,

VAUGHAN MAY, M. D.

and Surgeon to his Majesty's Ordnance.

To

Mr. Dunning.

My medical friends will not perhaps, on the present occasion, think that their line will be weakened, by the station I have given among them, to a Captain in his Majesty's Navy.

14 July, 1804, Princes-street,

MY DEAR SIR,

I understand you are about to publish some further remarks on the Cow-pock Inoculation, as I every day hear that the protection this gives to the human body against the Small-pox, is not of a longer duration than three years, it may be very important to know, and I have great pleasure in communicating to you that my son Richard has been twice directly exposed (probably a hundred other times) to the most powerful influences of the infection of the Small-pox; the first time soon after you inoculated him, in May, 1800, by sleeping with a child ill of a full crop of the Small-pox; the second time by going near a tent which was fixed for the reception of some soldiers of the 28th regiment ill of the Small-pox, one of them shook him by the hand;—this last circumstance happened more than three years after you inoculated him with the Cow-pock, and it did, if it were possible, more than ever confirm in my mind the good opinion I had long entertained of it.

Allow me to say your disinterested and unremitting conduct merits every thing I can say, and believe me
very sincerely yours,

H. HUTCH. BIRKHEAD.

To Mr. Dunning.

Plymouth-Dock, July 14, inst.

MY DEAR SIR,

Enclosed are minutes made by me, on the appearances exhibited on the arms of your two children,

whilst under Inoculation for Small-pox :---these Experiments do honor to your feelings as a friend to humanity ;---since they were instituted for the laudable purpose of ascertaining whether or not Vaccination secures the constitution for a longer period than three years against variolous action.* As the subject is extremely interesting, and one which demands early refutation, I feel assured you will lose no time in combating Mr. Goldson's opinions which must necessarily tend to awaken the fears of many, and give alarm to the prejudices of those, who by repeatedly witnessing the good effects resulting from Cow-pock Inoculation, were at length convinced of its utility, and who no doubt ere long, would have become zealous advocates for its more general diffusion. Had any doubts existed in my mind, as to the power which the Vaccine Influence possesses of securing the constitution permanently, from the infection of Small-pox, the Experiments before alluded to would have completely removed them : but when I further recollect that Inoculation with Cow-pock matter, has been very generally introduced into this and the adjoining towns, nearly these five years ; during which period some thousands have been vaccinated without one single unequivocal case occurring of their having afterwards the casual Small-pox (tho' constantly exposed to its influence ; the town of Dock during the whole time never having been free from contagion,) I must confess it requires yet stronger evidence than that adduced by Mr. Goldson to shake my faith.

Believe me my dr. Sir,

yours truly,

To Mr. Dunning.

AND. SARGENT.

*Vide Goldson's pamphlet.

Plymo. 27th July, 1804:

MY DEAR SIR,

According to my promise at your request I sit down to state to you the case of the Inoculation of the Small-pox in two patients at Swilly, in both of whom I had inoculated the Cow-pox sometime before. The one was an infant of Mr. Furneaux, the other a servant maid. The servant at first refused to submit, because, as she told me, she had been repeatedly inoculated ineffectually before. However, upon being persuaded that instances had occurred where Cow-pox had failed till after repeated trials and yet had still succeeded at last, she was prevailed upon and submitted. The Inoculation took effect and the Cow-pox was produced and proceeded regularly, in both instances, in the usual manner. Some time after this I inoculated them both with the Small-pox, in the following manner,---in one arm I inoculated by a slight puncture of the cuticle, with a lancet impregnated with Variolous Matter; in the other I made a wound thro' the cutis, I laid in a cotton yarn drenched with Variolous Matter into the membrana adiposa, which I well remember was the usual mode of inoculating fifty years ago, and which generally produced more abundant pustules, and larger than is generally produced by the slight mode of inoculating practised in modern times. Both arms in both patients showed evidently all the effect that Variolous Matter could produce, but no Small-pox was produced in either of them :---I have seen exactly the same effect from the same method in other instances. What inferences may be drawn from those instances I leave to others to determine.

I am Sir, your most obedt. servant,

CHARLES YOUNGE.

To Mr. Dunning.

MY DEAR DUNNING,

As I understand you are engaged in publishing some Experiments undertaken to ascertain the permanent security of Vaccination against every possible exposure to the Small-pox, I take the earliest opportunity to acquaint you with the result of my experience, which has been highly satisfactory.

I adopted the Jennerian Inoculation in 1799, and have vaccinated above fifteen hundred; many of whom have been repeatedly exposed to Small-pox infection; and, as might be expected, with impunity.

Master P. Curgenvin, vaccinated November 1st, 1799, (see the 12th No. of Medical and Physical Journal,) was in April last exposed to Variolous Infection from a servant for many days in a small room, which he completely resisted.

Another of my little patients, four years and six months after Vaccination, was exposed by his mother, to a more loathsome trial, in a confined room, highly saturated with Small-pox infection from two adults who had the disease in its most malignant form;----he was compelled, *proh! fadum dictu*, to eat bread moistened with their saliva and matter, and placed in the same bed, where he frequently slept, without having suffered from this very disgusting experiment.

I do assure you I have never seen any thing like Small pox to follow Vaccination in my practice.

I am, my dear Dunning, with great esteem,
your very humble servant,

July 25, 1804.

THOMAS STEWART. M. D.

To Mr. Dunning.

28th July, 1804, Plymouth.

MY DEAR SIR,

I have ever considered you as entitled to the warmest thanks of the profession, and the public at large, for your unremitting attention to the Jennerian Inoculation: you have now meritoriously stepped forward in its support, and though its progress has been impeded by a recent publication, I trust sufficient is known to plead an arrest of judgement, until its credit be tried by better *criteria*, and better *evidence*. I beg leave to say that, having been among the first to inoculate in this neighbourhood, I am enabled to lay before you the result of a pretty extensive observation. I have never seen or heard any *fact* to shake my entire confidence in its being an absolute and *permanent* security against Small-pox, where the patients have gone fairly through the process; I have exposed them to Variolous Contagion, (at very distant periods,) in every possible way; have even put them into bed with confluent Small-pox, with such complete satisfaction to my patients, that for a considerable time, a second Inoculation has not been resorted to. Your children's cases, which I saw, are decisive and in confirmation of this: let it be remembered also, that a Mr. Stephens,* nursed his own family in the natural Small-pox with impunity, 27 years after having had the Cow-pox: a greater interval of time will appear in the case of John Phillips, 53 years after. I admit that adventitious circumstances do now and then occur, but will not, I am persuaded, weaken the general suffrages in its favor: these deviations may, by an accurate observer, be always distinguished from true Vaccinia.

* See Medical Journal.

The duty I owe to humanity, to my profession, and to society, obliged me to add my mite to the body of evidence you are able to adduce ; public attention is attracted, truth is concerned, and will prevail. Believe me, with every good wish,

My dear Sir, very truly yours,

To Mr. Dunning.

SAMUEL FUGE.

SIR,

Being a zealous advocate in favor of Vaccine Inoculation, I am induced to send you the following cases, for insertion in a reply which you are about to publish to some accounts lately laid before the public, tending to create prejudice against this great blessing to mankind.

Case 1. A child of Mr. Crossing, at Morice-Town, was inoculated by me for the Cow-pox, and went thro' the disease in a way so as to satisfy me perfectly that it had received all the benefits this practice is capable of affording. I told the friends that I had now no fear of the influence of the Small pox, and desired them to expose the child to that contagion, in every possible way, and by no means to attempt avoiding it, at any time. This injunction was fully complied with---the child was exposed to the contagion repeatedly,---but the father having imbibed prejudice and fearing there was danger of the Small-pox still being liable to appear, determined to try an experiment which would be to him a decision : about nine months after the child had passed the Cow-pox, he procured a subject labouring under a severe burthen of Small-pox and (using his own words) when the pustules were very full, he took a sharp

penknife and made a small wound on his child's arm, taking care to make a division of the skin large enough to receive a great quantity of the matter, with which he well supplied the incision, being quite warm, and sufficient to have infected a whole regiment of soldiers.— The event was looked for with much anxiety as he expected his child to have been loaded with Small-pox, but on the contrary, (still using his words,) it only produced a bad arm, as any other offensive application would, and sealed his satisfaction that the Small-pox had no power of infection. He now recommends the Vaccine Inoculation to every one with whom he converses on the subject.

Case 2. A young woman, aged 18, came from the country to this town, about the same time I inoculated Mr. C's child, and made application to me to inoculate her with the Small-pox---this I refused to do and found it necessary to use some persuasion in favor of the Cow-pox, as she was prejudiced against it; however, she at length submitted to be inoculated with the latter, and when I informed her I thought her secure, she still suspected that she was liable to Small-pox, whenever she should be exposed to that infection. I directed her (as is always my rule) not to avoid them, but to place herself in the way of them, on every opportunity that offered:---she did so, and on meeting her 12 months after, I enquired if she had the Small-pox yet? her reply was no, and I know I never shall, for I have nursed children in the Small-pox, have often rubbed the matter over my arms while warm, and, what they told me would be most effectual, have leaned over the beds and cradles of the sick to inhale the effluvia by my mouth and nostrils, without finding myself in the smallest degree affected by it.

These cases are facts, and appear to me to coincide

perfectly with the experiments I have seen made in your own family,---excepting the distance of time after the first Inoculation ; this I must confess does not make any difference in the impression produced on my mind by the above, and a variety of other instances to the same purpose. All my experience is uniformly in favor of the opinion contained in my testimonials to Dr. Jenner, " That the Vaccine Inoculation is a preventive of Small-pox, at all times when the constitution is completely saturated therewith ;" nor have I ever seen even one instance to invalidate it ; I therefore confide that the cases related to the contrary must depend on some incidental cause acting as an impediment to the susceptibility of the habit at the time, and from which have arisen the train of anomalous occurrences related to have followed.

I am Sir, yours truly,

July 16, 1804.

JN^O J. SMITH,

To Mr. Dunning.

MY DEAR SIR,

I cannot but express my surprise and regret that the cause of humanity, in which the immortal Jenner, and many other Philanthropists, have been so ardently engaged, has recently been attempted to be vilified and robbed of the merits which are so justly due to it.—The strict investigation which it underwent, the mass of incontrovertible evidence adduced in its favor, and the innumerable documents laid before the Legislature, were, I should have supposed, sufficient to have prevented opposition from ever again rearing its head, and entitled the practice to universal adoption ; but sorry am I to find that those hopes for the present are not realised, and that the public mind has been thrown into a state of uncertainty from the representa-

tion of the inefficacy of Vaccination beyond a limited period. — I am extremely happy to say that I differ in opinion from Mr. Goldson, the author of the pamphlet, to a sentence in which I allude, and am quite at a loss how to account for any man having the temerity to affix a specific period of action, subsequent to which, the constitution shall a second time be rendered susceptible of receiving the disease, whose baneful effects Vaccine Inoculation has been instituted (and not without reason) effectually to oppose.

I need not, my dear Sir, enumerate the variety of patients who have been vaccinated by you, and afterwards repeatedly exposed to variolous contagion of the most malignant kind, without producing any effects which could, for one single moment, give you the least disquietude of mind, as to the perfect state of security under which they were placed to resist Small-pox Infection — Had not my mind been previously made up respecting the permanent safety which the human constitution derived from Vaccination, the cases of your two sons were sufficient to have made me a convert to the cause, which I sincerely hope will yet (notwithstanding ineffectual attempts have been made to bring the practice into disrepute) be esteemed not only by the present, but by succeeding generations, as one of the greatest blessings attendant on the human race.

I am, dear Sir,

with the greatest respect,

your humble servant,

J. LOWER.

Clowance-street, Dock,

16th July, 1804.

To Mr. Dunning.

Plymouth-Dock, July 16, 1804.

SIR,

As you have requested me to give my opinion on the Vaccine Disease, I do so with great readiness: tho' had it not been for the recent objections which have been raised against this invaluable discovery, it would be scarcely necessary, since all, or at least nearly all, the medical gentlemen in this neighbourhood have already given their public testimony in favor of a disease, which I deem a complete security against the worst of all pests, the Small-pox. Although probably it has not fallen to my lot to inoculate so many for the Cow-pox as yourself, yet the number is by no means inconsiderable and the opportunities I have had of observing the disease from the commencement of Dr. Jenner's discovery, and the tests demonstrative I have experienced of its anti-variolous powers, enable me to speak with confidence on the subject. In further confirmation of which, I may add what I believe you are acquainted with yourself, that I have introduced the disease into my own family, having inoculated, first four of my sister's children, who have since been repeatedly exposed to the Variolous Contagion without any effect, and lately I have inoculated my own little boy, whom I consider as safely guarded against the Small-pox, as if he had already passed through that dangerous disorder. I mention these, to show my perfect reliance on the Vaccine. But you have, if possible, more decisive facts to relate, which I merely allude to, as I understand you are about to lay them before the public; I beg leave however to say, I have as well as yourself inoculated for the Small-pox after the patient has had the Vaccine Disease, without the smallest constitutional effect. I would also add, that I have never met with an unfavorable case of the Cow-pox, and

only one or two where there have been any eruptions afterwards, which have been, with a little medicine, in a short time dispersed: nor have I met with any trouble from the inflammation on the arm, it having wherever it has been high, which has been very seldom, subsided on the application of cold water to the part affected.—These circumstances which have come within my own knowledge, together with the ample and almost universal testimony of the medical world make me speak with more than ordinary confidence, and whilst I regret the late publication at Portsmouth, I cannot help believing there must be some mistake or misrepresentation in the facts, or what are supposed to be facts therein contained.

That there have been cases of the Small-pox occurring twice there can be no doubt; an instance of which occurred under my own knowledge a few years ago.— This fact is by no means solitary in the history of medicine, as I have read of similar instances in authors, and have heard them related in lectures. What may be deduced from this is, that supposing one or two instances can be related unfavorable to the Vaccine Disease, it by no means invalidates the general principle which is supported by such an incontrovertible mass of evidence, especially as the occurrence of the Small-pox does not in every instance secure against a second attack of that disease.

I am Sir, yours most respectfully,

To Mr. Dunning.

JOHN PENKIVIL.

DEAR SIR,

At a very early period after Dr. Jenner made his invaluable discovery of the Cow-pox known, I became an advocate for it, and I have, ever since I have been in practice, inoculated for it. And in no one in-

stance have had an occasion to alter my opinion of its being an effectual security against the Small-pox.

Many of those whom I've vaccinated have been frequently exposed to the contagion of Small-pox, where it was reigning in its most malignant form; and some few instances where the Small-pox was in its eruptive state in the same family, at the time of Inoculation, and the children continually exposed to it without producing any effect whatever from the Variolous Contagion.

With respect to Mr. Goldson's idea of its being a security for a limited time only, and that probably not exceeding three years, I hazard an opinion that the cases on which this has been formed, must have been spurious cases of Cow-pox mistaken for the genuine Vaccine.

The case of your children I have seen several times during the experiment, and do consider that of the *youngest* to be one of the most decisive ones that possibly can be adduced in contradiction of those of Mr. Goldson, and I sincerely hope the publishing it may do away those prejudices which people may have formed against Vaccination from the reading Mr. G.'s pamphlet.

I am Sir, with respect,

Dock,

your obed^t. humble servt.

July 18, 1804.

JOHN BONE.

To Mr. Dunning.

Millbrook, July 21, 1804.

SIR,

In addition to the letter already transmitted to Mr. Little, I beg leave to say that from April, 1800, (when I was first favored with Vaccine Lymph from Mr. Little,) to this time, I have vaccinated upwards

of three hundred patients: a considerable portion of whom have been since inoculated with Variolous Matter, and repeatedly exposed to every species of infection without being in the slightest degree affected by it.—No illness of consequence has occurred to me in a single instance; or have I ever met with an unpleasant vaccinated case, either at the time of Inoculation or any subsequent period, and I am thoroughly impressed with an idea of its efficacy in every case where due attention has been paid to its progress and appearance. Twelve months since I vaccinated seven children at the same time; the whole received the infection; and, till the end of the sixth day, were nearly similar at the punctured part. One child was then seized with symptoms of ruleola, and the eruptions made their appearance in three days after, (ninth,) and the size of the puncture considerably diminished, and continued stationary till the 12th, then began to enlarge, and on the fifteenth day from the Vaccination, had attained the highest point of perfection, and the child was slightly indisposed:—Variolous Inoculation has since been tried without effect.

I remain yours, &c.

To Mr. Dunning,

P. ROGERS.

Plymouth, 25 July, 1804.

DEAR SIR,

At this period, when at least the medical world, had nearly come to a decision on the merits of Vaccination, it is much to be regretted that any circumstances should have occurred capable of exciting an unusual degree of solicitude and apprehension: such however, being the case, and doubts having arisen in another part of the country respecting its powers of

resisting Variolous Contagion, I cannot help thinking that those who are acquainted with the disease must feel, in some degree, anxious to express their opinion on so interesting a subject, and I have particular satisfaction in offering a few lines to your notice, since it has in so especial a manner engaged your attention.

In the course of the last four years it has fallen to my lot to inoculate a considerable number for the Vaccine Disease, and in no one of these cases have I had recourse to the usual test of security by the subsequent introduction of variolous Matter, having been made acquainted with the experiments of many professional gentlemen in order to fix that point, the result of which appeared perfectly satisfactory. It may not be amiss in this place to observe, that the supposed cases of Small-pox following the Cow-pock, which have occasionally occurred in Plymouth and its neighbourhood, did not, as far as I could ascertain, go the length of establishing so important a fact: in short, I have never known an instance of the kind, nor do I think it at all likely to happen in any person who has ever had the disease with its characteristic appearances.

That the "simple saving rose," according to Bloomfield, may still continue to preserve its ascendancy, is the sincere wish of, dear Sir,

yours very truly,

NATH. SECCOMBE,

To Mr. Dunning,

Having been requested by Mr. Dunning, one of our most zealous and unwearied advocates for the Cow-pock Inoculation, to state my opinion on the subject, it is with the greatest readiness that I comply with his wishes.

Since its earliest introduction into this town and neighbourhood I adopted the new practice, and in no one instance have I been induced from the many reports of its inefficacy to abandon the steady prosecution of so great a good: the most uniform success has attended my Inoculations, and I am enabled to state from observation, that where children have been subject to strumous affections, as inflammation of the eyelids, &c. previous to the Inoculation, they have appeared to mend on the subsidence of the disease, and have enjoyed a better share of health than formerly: Small-pock matter has been inserted into the arms of many of my patients subsequently, without occasioning any effect whatever. I have inoculated from three days old to twenty years; casual exposure to Small-pox has been submitted to, and the same insusceptibility throughout has prevailed.

Notwithstanding the temporary check the Cow-pock Inoculation has suffered in this town of late, from the many unfavorable representations of individuals, it still continues to go on, and I sincerely hope will finally triumph over every obstacle.

Plymouth, July 16, 1804.

J. H. FUGE.

To Mr. Dunning.

Dr. Remmett has favored me with the following letter.

Plymouth July 18, 1804.

DEAR SIR,

If you think the following narrative of three cases which happened under my care, will in any degree serve the interests of humanity, by supporting the cause of Vaccination against its assailants; you are welcome to make any use of it you may think proper.

I am your most humble servant,

To. Dr. Remmett.

ROB. WILLS:

On the 17th of March 1804, I vaccinated three children (two boys and one girl) of Andrew Irvin, a private soldier in the Second Royal Garrison Battalion—The children had never had the Small-pox—Their mother was in the habit of going frequently to the houses of some of her neighbours, whose children lay ill of that disease; and, for this reason, I was apprehensive that the children might have taken the infection of the Small-pox, previous to their being vaccinated. I told the parents my fears; lest should they prove well-founded, they might imagine the failure to proceed from the inefficacy of the Cow-pox rather than the real cause. On the 10th day after Vaccination my apprehensions were justified by the mother's telling me that the eldest boy had been unwell for two or three days, and had a rash about him. On examining this rash, I discovered it to be the Small-pox of the distinct kind. The appearance of the Cow-pock pustule was not apparently altered by the coming on of the Small-pox, but it went on through the different stages of the *disease* in manner precisely similar to those of the other children. The other two children, who slept in the same room with him by night, and were, at my request, kept near him as much as possible, during the day, never took the Small-pox, or had any greater degree of fever than is usual in common cases of the Cow-pox.

MY DEAR SIR,

The Minutes of your Experiments on the Cow-pock, which you was so good to read at our last medical meeting at Dock (more particularly those in your own family) remove from my mind every doubt (if I had any) that persons inoculated with the *true sort*, would ever have the *Small-pox*.

I think the public ought to be particularly thankful to you for your indefatigable zeal and attention in completely rescuing this truly valuable discovery from every idea of insecurity. except it is undertaken by ignorant and inattentive practitioners, which I very much fear is too often the case, and is the sole cause of all the doubts which have been suggested and even supported by those who ought to have discouraged them.

I am, dear Sir,

yours very respectfully,

BARTH. DUNSTERVILLE.

Plymouth, 26th July, 1804.

To Mr. Dunning.

Plymouth Citadel, 27th July, 1804.

MY DEAR SIR,

Permit me to add my mite of evidence in support of Vaccination, the decided good effects of it have been strongly demonstrated in the person of my own child—who by yourself was vaccinated near three years since, and has at various times been exposed to Small-pox contagion with impunity. I witnessed the introduction of the benign principle into this neighbourhood, near five years ago, and have duly watched its progress to this time. All my experiments tend directly to establish my confidence in it, and these which you have lately instituted in your own family leave nothing on the score of evidence to be wished for.

Yours sincerely,

N. ARMSTRONG, Surgeon of the Garrison Battalion,
and Member of the College of Surgeons.

To Mr. Dunning.

N

Dock, August 11, 1804.

DEAR SIR,

Having seen lately an objection to Vaccination, under the idea of its not proving a preventive against Small-pox; I beg leave to say, in every case, which has fallen under my notice, that it has always secured the patient from its attacks, where the Vaccine Matter has fairly operated and gone through its progressive stages; in that case, I certainly must give my opinion in favor,

As I should not acquit myself on the present occasion, were I to hesitate, and not make my full declaration, as to its securing the patient from Small pox infection ever after; as there are not wanting cases to prove its security, which might be introduced, but as these are already known to Professional Gentlemen, there is no occasion to state those which are so well substantiated.

I remain Sir, yours, &c.

D. H. SPRY.

To Mr. Dunning.



POSTSCRIPT.

Veritatem non famam sequimur.

When a few numbers of this pamphlet had been sold my friends requested me to stop the sale of them for the sake of annexing some further details of those Experiments which had been instituted at Plymouth, by Dr. Stewart, in the course of which some novel circumstances had in the meantime arisen.

DEAR SIR,

Dr. Stewart has been pleased to address to us Minutes of the Experiments lately instituted by him for the purpose of ascertaining the permanence of the security derived from Vaccine Inoculation, and of exemplifying the comparative effects of the intersion of Variolous Matter in subjects, who had previously had the Cow-pox or Small-pox by Inoculation. In their progress these cases have excited considerable attention, nor will the circumstances, by which they are characterised, be deemed unimportant even by those who are most conversant in the history of the phenomena of the two diseases. Impressed with this persuasion we cannot transmit them to you, agreeably to Dr. Stewart's desire, unaccompanied by some observations on the leading particulars, from which it will appear that the result of these Experiments has not led us to form an opinion respecting the influence of Vaccine Inoculation different from that which we expressed in our former letter to you of the date of July 21. On the contrary it will be found,

that these cases tend, in our opinion, to confirm the notions suggested in the concluding paragraphs of that letter.

In contrasting the appearances in these Experiments with the usual appearances of Variolous Inoculation it may be observed as applicable to all of them, that the inserted matter produced immediate inflammation in the inoculated parts, some slight indisposition so early as the fifth day, and an eruption of pimples at the same early period; nor can it be disregarded, that in the previously vaccinated children the appearance of the eschars resembled the vaccine much more than the variolous eschar, and that this character was equally, perhaps more strongly, impressed in that child, in whom in other respects appearances bore the strongest resemblance to regular inoculated Small-pox. With respect to the vaccinated children it may also be remarked, that the effect produced in them by the variolous matter differed in degree only, and not in kind. On all it may be said to have operated; but on one to such a degree, it must be confessed, and the confession is most readily made, as would in our opinion, at a certain period of the disease, have induced any competent judge, unacquainted with the history and previous circumstances of the case, to believe that this child was affected with regular inoculated Small-pox. But when the state of the arm, the indisposition and eruption of pimples in the early days of the experiment, and the subsequent aspect of the eschar, are taken into consideration; when the affinity of the early appearances in the other vaccinated children, in whom there is confessedly no suspicion of Small-pox having occurred, and finally when the almost complete correspondence of symptoms and appearances in the child, who had previously had the Small-pox, are added to the account; no doubt, we think, can be entertained

that the phenomena in Mr. Rendle's eldest son must be referred to that influence, which inserted variolous matter is still capable of exerting in certain individuals, who are notwithstanding, by having previously had the Small-pox, rendered secure from the contagious influence of that disease in the common course of exposure. Entertaining this idea of a remaining imperfect susceptibility of variolous infection before the occurrence of the case in question, we referred in our former letter to that of Mr. Miles, recorded by Dr. Jenner, not considering it as a single or solitary instance, but as affording a well marked exemplification of a well known fact. To this instance the case of Dr. Stewart's eldest daughter has a very near affinity, and to both the case of Mr. Rendle's eldest son bears so close a resemblance, that we cannot hesitate to refer them all to the same class of phenomena.

In this, as in our former letter, we have limited our remarks to the effects of inserted Variolous Matter in subjects having previously had Small-pox or Cow-pox, without intending to deny that a similar effect may occasionally, though much more rarely, be produced by the variolous influence without insertion. In the well known case of nurses, contact produces local affection; and Dr. Jenner records, on the authority of Mr. Fewster, a striking instance of local and constitutional affection induced by contact or contagion in a person who had previously had the casual Small-pox to no inconsiderable degree.

We cannot conclude without concurring with Dr. Stewart in wishing that the test of Variolous Inoculation may not generally be had recourse to. For although in by far the greater number of instances, no inconve-

nience has resulted from the practice, yet experience in these and other cases sufficiently proves that Variolous Matter cannot always be introduced into the system with impunity. In those in whom it cannot exert its specific power, it is still capable of exerting the pernicious influence of a morbid poison.

We are, &c. &c.

R. B. REMMETT,

WILL. WOOLLCOMBE.

August 13, 1804.

To Mr. Dunning.

Plymouth, August 11, 1804.

GENTLEMEN,

I beg leave to communicate to you the result of some Experiments, which have excited much interest among my Medical Brethren in this town and in Dock; and I do it the more readily, as they were conducted under your immediate observation.

On the 24th of July, with active Variolous Matter, taken by Mr. Dunning from a child of Mr. Thompson at Stoke on the ninth day of the disease, I inoculated two children of Mr. Rendle, Druggist, in Plymouth.—The eldest had been vaccinated by me four years and four months before, the youngest three years and six months.—On the same day my friend Seccombe inserted some of the same variolous matter into the arms of my three children. The eldest, Mary, (never having been vaccinated,) had been inoculated by me for the Small-pox more than six years before, and then had nearly

200 pustules in full maturation. My second child, Thomas, had been vaccinated three years ago, and my youngest, Sophia, two years. In all these children more matter was inserted than usually is by the present mode of inoculation.

July 25th — The arms of all the children were more inflamed, and the cuticle more elevated, than I have ever seen in any case four or five days after inoculation in ordinary circumstances.

28th. — The inflammation is to day considerably increased.

29th — The affections on the arms of all the children appear to increase; on this day they were visited, for the first time, by Dr. Remmett, Dr. Woollcombe, and Mr. Dunning, who continued to mark the daily progress of the experiments, and by Mr. Seccombe, who had seen them every day after the inoculation. The negative variolæ, by which term I would express the local effects in the inoculated parts, we considered to be apparently near their height. Relatively to the local affection usually produced by the insertion of Variolous Matter into the arms of susceptible habits, these were small, became more suddenly prominent, and, from their size and appearance, conveyed pretty much the idea of a small grain of wheat. The base was of a light red or pink color. On this day several pimples appeared on all the children; and it is worthy of remark that those on my eldest child, who had passed the Small-pox, were in every respect similar to those on the other children, and that they were more numerous, amounting to fourteen or sixteen, whereas in none of the other children did the number exceed six or eight.

There was certainly some whiteness on the tongues of all the children, and slight indisposition, rather more apparent in my eldest child than in the others.

30th.—The pimples and indisposition were nearly as on the preceding day; the areola extended nearly to the size of a sixpence on most of the arms.

31st —The areola was now as large as a shilling, and of a light vivid redness. This morning five or six eruptions very suddenly appeared on the external wrist of the inoculated arm of the eldest of Mr. Rendle's children. These began with a little circumscribed efflorescence about the size of the tip of a small finger, which in a few hours acuminated in the middle into a very small pimple, less than a millet seed.

August 1.—My eldest girl and Mr. Rendle's eldest boy were this day seized with the symptoms of the eruptive fever of Small-pox; and they were much more violent in my dear girl, than when she had the Small-pox originally. The pock or vesicle on the arms of all those, who had been vaccinated, had much the appearance of the Cow-pock, while that on the arm of my eldest daughter assumed the appearance produced by inoculated Small-pox. There were at this time one eruption on the left cheek and three on the upper lip of Mr. Rendle's eldest child, certainly more resembling approaching Variolæ than any we had yet seen. My eldest child's arm was now more vividly inflamed than at any time before, and more eruptions appeared, more indeed than there were on Mr. Rendle's child. Many were acuminated, and Mr. Kerwell says that one of them on the face distinctly matured, but the contained fluid escaped while I was absent from her.

2d.—The two eldest children passed a very restless night, had much fever, attended in Master Rendle with some delirium, and continued during this day upon the whole much indisposed. Another pimple on the cheek and one on the nose, similar to those observed the preceding day, had now made their appearance on him. The scabbing process on my youngest child's arm was now completed. In her the effects of the Inoculation were altogether inconsiderable.

3d.—Much as yesterday: the eruptions on the face of the eldest Rendle were advancing to a state of maturation. Matter was this day taken, by Mr. Seccombe, from his arm and from his face, and inserted without mixture into the arms of two children, who had not had the Small-pox or Cow-pox.*

4th.—Several fresh eruptions have appeared on my eldest girl.

10th.—Mr. Rendle's child is now free from complaint, and the eruptions are dying away. My dear girl is much recovered; she has certainly suffered more than any child I ever inoculated. Her case I think clearly points out the danger of introducing morbid matter into the circulation, and confirms the observation of our immortal Jenner, that the constitution cannot by previous infection be rendered totally insusceptible of the Variolous Poison. Why therefore should we expect more from the Cow-pox than from the casual or inoculated Small pox? From the 29th of July to

* The result of these Inoculations is yet indecisive on this day, August 13th.

the present time we have had a succession of eruptions on the two eldest children, which I need not observe is very different from any thing we ever meet with in the inoculated Small pox. I this day pointed out to my friends Dunning and Little the remains of a Small-pock on my eldest girl's finger, which very much resembles the pitting of the confluent sort.

All the children are now quite well; but it must be remarked, that my son has been much disordered, and has had on his skin several appearances very similar to those which were observed on the 29th of July on his sister and on Mr. Rendle's eldest son; and that the eschar on his arm as well as the eschars on the arms of Mr. Rendle's children have a very striking resemblance to those produced by Vaccine Inoculation.

In addition to these cases it may be satisfactory to mention that Master P. Curgenvin, who was vaccinated by me in the year 1799, (as related in the third volume of "The Medical and Physical Journal," page 234,) has also recently been inoculated with Variolous Matter. No indisposition or eruptions took place, the inflammation on the arm was slight, and the scabbing process was completed on the eighth day. This child in the interval between Vaccination and this late Inoculation had been once inoculated with Variolous Matter, and had been particularly exposed to variolous contagion by passing some time for several successive days in the room and on the bed of a servant of the family affected with natural Small-pox. It might also have been observed that Mr. Rendle's children must from their peculiar situation have been frequently exposed to the contagion of Small-pox, as the children of the poor, labouring under Small-pox, are continually brought

into their father's shop, where these children have been accustomed to be without any reserve.

I am, Gentlemen, with esteem and regard,
your very humble servant,

To THOMAS STEWART.

Drs. Remmett and Woollcombe,
Physicians, &c.

If the events which took place in the preceding cases have not immediately opened to us new sources of information, they have amply taught us how unwise it is to introduce morbid poisons into the system. Those which relate to Miss Stewart tend directly to countenance my reply to Mr. Goldson's question with respect to eruptions arising from Inoculation in persons who have passed the Small pox. I attended to these cases as regularly as I was able, and have since reflected on them with as much application as my avocations and the afflicted state of my family (for the Scarlatina had attacked with dreadful severity another of my children) allowed me to command. I admit without a moment's hesitation that three, perhaps four of the eruptions in Mr. Rendle's eldest child much resembled those minute Small-pox which I have formerly sometimes observed in Variolous Inoculations: but when I recollect that the whole case was a train of anomalies; that the local affection on the arm partook considerably more of the character of Vaccination than of Variolous Inoculation, a circumstance which assures me that the previous Vaccine Impression had been correct, for I would by no means attempt to shelter this case under a suggestion that the Vaccination might have been spurious:—when I recollect

that there was a fluid in these eruptions as distinctly within a few hours of their appearance as on the third or fourth day inclusive, when two of them began to dry;---when I recollect that the venerable Heberden, under whose review this disease must have passed at least as often as under that of any man, and whose observations are very generally and justly esteemed aphorismal, says of the Small-pox, "*in eorum apice nullus humor est secundo tertiove die, nec denique crustæ sunt quinto*,"---"there is no fluid in them on the second or third day, nor do they scab as early as the fifth;" when I recollect that the constitutional affection of Miss Stewart, who had been inoculated six years before with the Small-pox and had nearly two hundred of them in full maturation, was as decisively marked and continued as long as that of this child, that the eruptions were more numerous and of equal duration, that one of them (Mr. Kerwell assured me) distinctly matured in the face, and that many of them were acuminated; when I recollect that Miss Curgenvin, who was the first vaccinated subject in Plymouth now almost five years ago, that Dr. Stewart's, Mr. Rendle's other children, and my own, vaccinated more than three, and Miss Hitchins who was vaccinated more than four years ago, have resisted with impunity the tests to which they have been respectively exposed; when I recollect other numerous and equally conclusive experiments which I have witnessed; when I recollect the unusual degree of erysipelatous affection which took place on Master Rendle's arm, extending from the place of insertion downwards to the external wrist, and upwards nearly to the shoulder, the fever which necessarily attended this, that the child was in high ruddy health and had been obstinately costive for some days,* I say when I

*I need not mention to the unprejudiced what would have

recollect all these circumstances and maturely weigh them, I hope, I may be allowed to offer an opinion, and that too without the imputation of forcing circumstances to bend either to my prejudices or my wishes, that I do not believe these eruptions were specific Small-pox ;— I have yet stronger reasons to confirm me in this belief. —For some time after the Vaccine Inoculation had been adopted in London, general pustules on the body were observed so constantly to occur that the most eminent physicians there did not hesitate to assert, nor to publish their assertions, that the Cow-pox as it appeared in the way of Inoculation was a pustular disease. Having, however, never met with those pustules in the cases which had already fallen under my own observation nor seen them in those of my medical friends here, and our cases had now become numerous, I began to doubt much their existence, and did not hesitate soon to deny that these necessarily constituted any part of the process of Vaccination. I ventured to observe, in my “Observations on Vaccination,” printed in 1800, and written purposely to combat this pustular character, which was every day producing mischief, confusion, and dispute, that the ingenious and philosophical Pearson would very early explain away these accidental pustules---and this eventually happened---for it was soon acknowledged that these pustules were the consequences of Vaccination performed in the Small-pox hospital or its neighbourhood ; in short, that they were the adventitious results of the Vaccine and Variolous Principles introduced into the system at the same time. Now let it be

been the probable consequences of an Inoculation with Variolous Matter in a susceptible habit under such circumstances,—I would almost risk an opinion—let the anti-vaccinist cry bravo! if he pleases—that to Vaccination, perhaps, Mr. Rendle is indebted for the preservation of this child.

remembered that the local affection of Master Rendle's arm in this experiment very strikingly took on early a mixed character of the two Inoculations, that as the experiment advanced the vaccinated character prevailed, and that it terminated in a round black vaccinated scab. This is not an idea assumed by myself only; these facts were so remarkable, every person at all conversant with the specific characters of the two Inoculations, immediately and successively noticed them,---indeed all the arms of the vaccinated patients where the inflammation went on to any considerable length exhibited the same mixed appearances, and in all these the vaccinated character at length prevailed; but that on the arms of Miss Stewart and my eldest son, who had formerly been inoculated with the Small-pox, was *tota facie* different. I pretend not at present to reason about these appearances, which I do not know have yet been elsewhere remarked, but I feel fully at liberty to draw from them the following induction---That if the affection on the arm takes on, so unequivocally, a mixed character, that any eruptions or results which may follow in a few cases placed under circumstances the most favorable to produce determinations on the surface, must necessarily be also of a mixed character---in other words, a *tertium quid* or spurious effete production, unattended with any circumstances of danger or bad consequences ---I shall yet more correctly convey the idea perhaps which I wish here to impress, were I to term these secondary eruptions an hybrid result, incommunicable in all probability by infection thro' the atmosphere; but which, as probably, may be repeated again and again by Inoculation. This is I believe the utmost influence that the insertion of the variolous poison can exert in a subject previously and duly vaccinated. Exposure to the casual infection of Small pox, (which is indeed the natural test---Inoculation is not,) does not seem to be

able to effect even this. I ought to have mentioned that the pustules alluded to just now in the early practice of Vaccination were reproduced by Inoculation with matter taken from them ; but that when matter was no longer taken from this impure source, these ceased to propagate themselves. It must never be forgotten that we have seen second Inoculations with the Small-pox producing nearly the same consequences.

I hope to avail myself of another opportunity to offer a few observations which these events have suggested ; whether useful or no, I know not : I shall therefore only remark now, that the laws and agencies of nature are defined by boundaries too determinate to admit any human experiments to multiply the genera of permanent diseases :-- --we may indeed by our luxuries and irregularities derange and disorganize our bodies, so as frequently to produce new varieties of disorder ; but we cannot, certainly, either by our vices or ingenuity generate new diseases which will permanently reproduce themselves in any other way than will presently be mentioned. The neutral character which is invariably stamped on the first results of every attempt of this nature, is at once the fiat of irresistible opposition.--- That the Cow-pock is a modification or hybrid result of the variolous and some other principle, can now hardly be doubted ; its affinity to the Small-pox is ascertained by many characters common to both ; and these common characters, as we see it has been most wisely and benignantly ordered that the human body can only once be dangerously arrested by the Small-pox, are the strongest reasons to induce a belief without extravagant expectation, that a previous impression of the one will be competent to protect against subsequent attacks of the other.

The Cow-pock and every other hybrid principle ceases to exist as a human disease the moment you cease to thrust it into the system thro' a wound in the skin ; ---it is in this hybrid character of the Cow-pock I have found the most satisfactory argument to account for the absence of infection through the medium of the atmosphere, which distinguishes, unlike the Small-pox, this benign agent. In this hybrid character I find also the best answer to an objection apparently the most reasonable and valid against the practice of Vaccination, I mean the risk of adding to the long catalogue of human diseases. The Cow-pock, which can only be perpetuated onward through the human species by the medium of Inoculation, cannot be deemed a human disease,---on the other hand, the ready susceptibility of the human constitution to take up variolous miasms afloat in the atmosphere, places this destructive malady in another point of view, and has given it a most formidable rank and character among the present genera of human diseases. All these remarks apply I believe with the strictest analogy to the results, &c. of the late Inoculations in Plymouth ;---these I should expect, while they probably may be repeated *ad infinitum* in the way of Inoculation, are wholly incommunicable by infection through the medium of the atmosphere, and must therefore immediately cease to be.

The question before us is of no common moment---it has, very justly, more scrutinizing eyes directed towards it than were perhaps ever directed to any medical enquiry before ; unquestionably then, it behoves every medical man to give the public his undisguised experience and unequivocal opinions,---under this impression I assert without hesitation, that the preceding cases taken together and connected with the experiments I have before detailed, and with the mass of evidence

furnished me by my friends, have served to strengthen rather than invalidate my confidence in the protecting powers of Vaccination against the Small-pox. They have assisted to shew me in a more striking point of view the barrier which this benign agent interposes: the circumstances which concurred in Master Rendle were, it appears to me, enough to have assimilated a susceptible habit into one variolated mass;---with all my experience now in retrospect before me this is my creed---to which I should, at this moment, adhere were the universe in opposition.

Having exerted myself to forward what has hitherto appeared to me a public blessing, I have without apprehension expressed my sentiments in strong language;—on the other hand, if future events prove that I have been mistaken, I shall, unconscious of reproach, with equal firmness and regret fully retract them. Where our object is the preservation of human life, let us endeavour, by probable reasoning and fair inference, to obviate and explain any difficulties apparently at first a little adverse to our hopes, which may now and then chance to arise in the course of our labors,---at any rate let us not, by any means, without fully embracing and investigating all the concomitant and preceding circumstances, too hastily sanction and confirm them. No man I presume, whatever his experience and acumen may be, could, by looking once and again at the eruptions we have been adverting to, decide what they were. The public mind, at this moment alive to every fear, and on the present occasion very naturally inclined to prejudice, instantly takes alarm at every floating rumour, however preposterous and unfounded: we must, if possible calm and prevent these irritations.

Having been thus unexpectedly obliged to resume my pen, I will give a brief contrast of the two Inoculations, as they have respectively presented themselves to my observation in this large town; and first of Vaccination, ---at least as many more have been vaccinated in this place within the last four years than were ever inoculated with the Small-pox in the same time; not a single death nor even an approach to it has happened; many obstinate cutaneous diseases have been removed; the health of many delicate and apparently diseased children improved, and not an individual, I believe, been to any degree injured by it;---and I again solemnly repeat that I have not seen a case of Small pox subsequent, in the practice: on the other hand, for several years immediately preceding the introduction of Vaccine Inoculation, of those who were inoculated with the Small-pox, two at least (some say more) in every hundred have died; very many have with difficulty recovered, and many have now to lament lost or impaired sight, scrophulous affections, or shattered constitutions, during life; among the latter my youngest daughter is an example.*

* Augusta, one of the daughters of a very respectable gentleman in the neighbourhood of Glasgow, was inoculated for the Small-pox; the disease, however, made its appearance with none of the mitigated symptoms which Inoculation is intended to ensure; it raged, on the contrary, with the utmost virulence; and disfigurement and blindness were the consequences. One of the eyeballs seems to have been so completely obliterated by the disease, that the closed and deeply-sunken lids, far retiring into the sockets, only mark the position where the visual organ should be;---the lower part of the other orb (which is sufficiently obtrusive) appears to retain some small degree of sensibility of light; and thro' the medium of this organ it appears that the difference between night and day are indistinctly perceptible;

If the man who saves the life of one human being but no object of vision can either be distinguished or perceived. Vid. Monthly Mag. for July last, pag. 516.

If hereafter we are obliged, unfortunately, to resort again to the Small-pox, I trust it will early become an object of the legislature to direct that the Inoculations shall be conducted in some appropriate situation, at a small distance from large towns, since, from the want of this regulation, it has been proved from indisputable data, that the introduction of Inoculation has, in no inconsiderable degree, added to the mortality of the disease. The religion of many, and the circumstances of others, preclude a large portion of the community from sharing in the advantages to be derived from Inoculation: of these, larger numbers fall victims in consequence of this destructive poison having been kept up in perpetual activity and circulation by Inoculation, as it has hitherto been managed. That the Small-pox is a pestilence of the greatest magnitude in this country no one will deny. A little quarantine would hardly, then, be felt as trenching on the liberty of the subject, or the established habits of thinking: certainly such a regulation at this time, with respect to the inoculated Small-pox, would give a facility to Vaccination that would more contribute to the extermination of the Variolous Principle from the united kingdom than any other practicable means, that, perhaps, could be resorted to. To order by authority the discontinuance of the Variolous, or the exclusive adoption of the Vaccine Inoculation, is an idea that can never, for a moment, be adverted to---but justice and good policy demand that we do not endanger our neighbours; and, indeed, it does seem to me, that those persons placed under the influence of the causes I have mentioned, are entitled to much attention.---These observations are not presumptuously obtruded---but I have no doubt they will be termed by many, mere pertness and verbiage;---to those I would reply, that I feel not the inferiority of my situation when on the subject of health as connected with the public weal.

deserves well of his country, shall we, with so much positive evidence in favor of, and so little against the practice of Vaccination, relinquish, or even pursue it with indolence and apathy! forbid it all the charities of human nature! forbid heaven! Let us, for the sake of argument, or rather indeed to meet the ideas of those gentlemen who imagine, or who believe they see mischief and misery in the Jennerian Inoculation, at once allow that these three or four small pustules were, *bona fide*, the Small-pox, and then let us, in the name of the medical character, in the name of candor and humanity, ask them, whether these, if these and no more than these are ever produced by Variolous Inoculation in Vaccinated Subjects, (but by the bye, this test need never be had recourse to;) nay further, whether these and all the other unequivocal adverse evidence they can adduce and oppose to the success which has hitherto attended it, ought, for a moment, to deter us from prosecuting with ardour and honesty the great and desirable object of our wishes---the abolition of the Small-pox in the united kingdom. Extremely desirous to arrive at the truth, and ascertain, as soon as possible, the great question before us, we have not shrunk from subjecting our children to experiment; from the same motives we take liberty earnestly and respectfully to invite (for many of my friends earnestly join in the invitation) those medical gentlemen in this neighbourhood, who dissent from us on this occasion, to bring forward and publish their objections against the practice of Vaccination, and the source of them, as fully, as explicitly and as disinterestedly as we have here and elsewhere given our opinions and arguments in its favor:---thus will the public, who must look for information to the medical profession, be enabled to judge for themselves; thus will Vaccination be either soon established on a broad basis not to be shaken by ten thousand vague reports, or

be soon for ever relinquished. In the meantime our neighbours may rely with some confidence, for correct information on the Dock Jennerian Society; for, strange as the remark may appear, this society is not made up of empirics and impostors---the members of this institution have at least as much personal interest to ascertain the laws and powers of the Vaccine Principle as any other members of society. They fully acknowledge the magnitude of the question before them, and duly feel the weight of that responsibility in which they stand with respect to the public, and I undertake to say that they will uniformly act on and fulfil it: in short, if Small-pox occur after Vaccination, they will proclaim it by a dissolution of the institution.

Six or seven thousand subjects having been vaccinated in these towns, since the latter end of the year 1799, if the desired protection is not obtained by this practice, we must, necessarily, now daily expect to hear of recurrence of Small-pox among so large a number.—The question then cannot remain long undetermined,—we desire therefore that the public will for a little while, be carefully on their guard against any unfavorable reports which are perpetually in circulation, and also against the hasty decisions of those persons who have had fewer opportunities for observation, and whose opinions in many instances have arisen more out of their theories and prejudices than from their practice and experience.

Mr. Goldson has conducted himself professionally, and like a gentleman; I did not take up his pamphlet lightly, and I flatter myself that I have not treated it disrespectfully;—still I hope he is mistaken, and, if I read him at all correctly, I will add, that he hopes so too. Liberal and candid men cannot long be in opposition on a question like the present, either we shall soon

subscribe to Mr. Goldson's opinions, or Mr. Goldson will soon subscribe to ours. If in giving to the public these Minutes and Communications we have failed to be useful, we shall claim this meed with some confidence—that the public will accept the will for the deed.

Just as this last sheet was going to the press, I am favored with the following important fact, which, from an authority so highly respectable speaks more than volumes,—Dr. M'Gennis, Physician of the Royal Hospital here, writes me “that a young woman who had formerly *passed the Small-pox*, was some years ago bled with a lancet charged with Variolous poison, that this accident was followed, in the usual way, by the symptoms attending the commencement of Small-pox, and, as nearly as he can recollect at this distance of time, by *eleven pustules*,—that the friends of the young woman were much enraged at the carelessness of the gentleman who bled her, and that these circumstances fell under his own observation.”

DEAR DUNNING,

In attending the cases of Dr. Stewart's experiments of Re-inoculation with Variolous Poison, some marked features of its effects on the different subjects must have forcibly struck every discriminating mind;—the first and most prominent one is that of the marked distinction which the inoculated part preserved of the Vaccine character instead of the Variolous one, in the arms of four of the children previously impressed with the Vaccine Principle, and the Variolous Character on the arm of Miss Stewart, who had been previously variolated. This is not an observation forced in to serve the cause in which we engaged, but a fact which,

perhaps, future observation will invariably tend to confirm. I have only time to observe that these cases have, if it were possible, added something to the high estimation which I have long entertained of the practice of Vaccination.

Yours most truly,

Aug. 16, 1804.

DANIEL LITTLE.

Extract of a valuable letter this moment received from Mr. Gray, of Kingsland.

MY DEAR SIR,

Having always looked upon a general introduction of Vaccination as a most essential benefit to society at large, it is with great pleasure I observe you not content with having done every thing in your power towards its first propagation; but still ready to defend it against all attacks whatever.

I have constantly continued to practise it since the early part of the year 1800; and the greater part of my first patients I afterwards inoculated with variolous matter, without producing any thing more than a local affection. Since which time the natural Small-pox have several times been introduced into this town and neighbourhood; but no vaccinated patient has been attacked: in consequence of which many of my patients who had strong prejudices against it have become converts, and the people in general more reconciled to the practice.

August 16th, 6 o'clock in the evening. I am now visiting the children with Dr. Remmett, who were inoculated by Mr. Seccombe with matter taken from Master Rendle; one with matter taken from the lip,—

the other with matter taken from the arm; that from the former produced early a slight inflammation, which advancing to the 6th or 7th day, arose to a head containing a very little fluid.* In two or three days this entirely dried off, and has not been attended with a single pimple, or any the least disorder:—that from the arm has produced an appearance on the arm of the inoculated child *much resembling that from Vaccination*; this child became ill on the 11th day, and has had much fever; two or three eruptions not altogether unlike those which were observed on Dr. Stewart's children, or the greater part of those which were seen on Mr. Rendle's eldest child, have appeared. These minutes are made with Dr. Remmétt, who witnessed all the material points in the progress of these cases. It is hardly necessary to remark, that if the most regular or indeed the most confluent sort of Small-pox had followed this Inoculation with matter taken from the arm, no inference could have been drawn from this circumstance at all adverse to Vaccination.

* I believe this fluid inserted into another arm would have produced, locally, a similar consequence, that this may be repeated to any number of times,—but that nothing more than this would ever derive from it.—*Ex nihilo fit nihil.*

FINIS.

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Author

Dunning, R.

Minutes of some
experiments.

Call no. 1804.

Inoculation
vaccination

